A Study of Treatment Effects of Short-Term Hospitalization

Sherwin R. Van Klompenberg
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A STUDY OF TREATMENT EFFECTS OF SHORT-TERM HOSPITALIZATION

by

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A Thesis
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Faculty of The Graduate College
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A STUDY OF TREATMENT EFFECTS OF SHORT-TERM HOSPITALIZATION

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This research addressed the effects of short-term multifaceted inpatient treatment programs upon the severity of depression as measured by the Beck Depression Inventory.

The study was designed as a pre-post test using the Correlated t Test to analyze the results. The descriptive analysis describes what is presently taking place in a short-term hospital facility. The treatment staff indicated which treatment modalities should impact specific items on the Beck Depression Inventory. The data analysis supports the hypothesis that short-term multifaceted inpatient treatment will have a positive treatment effect upon depression. Statistical analyses were also conducted upon various population subgroups.

The treatment staff indicated that Fitness Center/Aerobics should impact the Inventory categories of sleep disturbance, fatigue, and loss of appetite. Yet the results indicated no statistically significant changes for patients assigned to this treatment while those not assigned did show statistically significant positive changes on these three categories.
ACKNOWLEDGEMENTS

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To my two typists, Sue Kent and Sylvia Jager, you performed a task which relieved me of great amounts of frustration. Your willingness to work toward deadlines greatly assisted in making the project complete.

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Sherwin R. Van Klompenberg
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CHAPTER I

INTRODUCTION

Psychiatric hospitals are designing their therapeutic programs with a short-term multifaceted approach. This approach is based upon the hypothesis that short-term hospitalization with intensive multifaceted treatment is the most effective and cost-efficient program design for inpatient treatment. Research is needed to determine effectiveness of this hypothesis and design.

The recent trend is toward short hospitalization (30 days or so) with a return to the community to practice new skills or interact with the social environment. The patient is readmitted for renewed treatment, again on a short-term basis, when he is unable to maintain. This approach then projects short-term hospital stays and, when necessary, multiple admissions. This approach is used for all basic nosological classifications.

Hospital treatment programs also are being designed with a multifaceted focus. The patient is assigned to multiple treatment therapies. This approach is built upon the hypothesis that, during short-term hospitalization, intensive therapeutic experience using multiple forms of therapy is the most efficacious and thus, most cost-effective. The patient is often assigned to 4-8 therapy modalities. Data to support this hypothesis for inpatient psychiatric programs are lacking.

Finally, this project has an economic basis. Obviously payees,
whether insurance carriers, medicaid, or individuals, desire to receive the most therapeutic effect for the least amount. Short-term sounds cost-effective. Multifaceted intensive appears effective. The question is this: who determines what will become therapeutically beneficial for the patient? Are these decisions based upon psychiatric/psychological research data or upon economic realities? It is not necessarily the case that the mental health and economic viewpoints are irreconcilably opposed.

Several questions should be asked concerning these ideas. Is short-term hospitalization the preferred duration or length for most or all diagnostic categories? In light of Beck's (1961) statement that inpatient depressive episodes average 6 months, is the short-term mode preferable for depressive disorders? Does the severity or depth of depression affect the efficacious nature of the length of the hospital stay? Is the multifaceted approach the preferred treatment for all diagnoses? What modality combinations are the most effective for what diagnoses? Ruch (1984) asked a similar question. When are too many too much?

These questions generate hypotheses for research studies which will have an impact upon mutual resolution of treatment questions and cost-payments concerns. Therefore, in this project I conduct an analysis of treatment effects of a short-term hospital program upon depression. The project addresses two aspects of the problem. First, it analyzes treatment effects of short-term hospitalization upon depression. Second, it analyzes relationship between various modes of therapy and items on an extensive depression inventory.
I chose the clinical category of depression for this study for two reasons: first, depression is a major mental health problem; second, despite many studies, many unanswered questions and issues remain in the field of depression.

**Historical Perspective**

Depression is a major mental health problem. It is estimated (Beck, 1979) that 12% of the adult population has or will experience a major depression episode that requires treatment. It is similarly suggested that the economic costs are .3 billion to .9 billion dollars.

The study of depression as a part of human experience has a long history. Beck (1967) and Lewinsohn (1975) observe that depression as a clinical manifestation has been with us for centuries. Yet our clinical knowledge is remarkably limited. Is depression an exaggeration of normal mood swings or is it qualitatively different? Is depression a well-defined entity with clear classification or a "wastebasket" for diverse problems. Does it have a psychological or biological etiology or both? Lewinsohn (1974) claims that most of the key issues relating to etiology and treatment are still unresolved.

Beck (1967), while discussing the basic areas of psychodynamic studies, claims that there remains a dearth of psychological and psychodynamic studies of depression. I agree with Beck that a major reason for this lack is the complicated conceptual and methodological intricacies and problems in the study of depression. The literature in this area indicates a recent multiplication of studies, but clear
evidence and support for particular treatment modalities or theories remain elusive. Here I present a basic overview of depression reflecting upon four basic categories, namely Basic Theoretical Perspectives, Etiology, Classification Issues, and Symptomatology.

Kraepelin theorized that mental illnesses or disorders were distinct forms of diseases defined by a particular etiology, symptomatology, cause, and outcome (Kolb, 1973). This perspective obviously affects diagnosis, prognosis, and treatment issues. Beck (1967) discusses related studies of a biological and physiological nature. For example, biological studies provide equivocal evidence that there is a disturbance in water and mineral metabolism with depression and that changes in steroid metabolism coincide with certain forms of depression. The biochemical theory presents evidence that a depletion of certain chemicals correlates with depression. Beck (1967) also cites Kraes' theories about a neurological and physiological explanation of depression although he sees the evidence as interesting but weak. The disease/physiological explanation is seen today in chemotherapy of depression.

Meyer (1908) formulated the theory of reaction types formed from an interaction between constitutional endowment and psychological or social forces affecting the person. This interaction creates a reaction on a continuum. Beck (1967) observes that the development of the continuity theories interjects the concept of mood with the spectrum of feelings as descriptive of depression. The environmentalists (behaviorists) present a similar perspective placing a series of mood reactions from mild to severe in response
to external stimuli.

The psychodynamic perspective emphasizes the internal psychological and mental/emotional mechanisms. Three groups comprise these theorists: the psychoanalytical theorist, the cognitive theorist, and the behavioral theorist. As Lewinsohn (1974) summarizes, the psychoanalyst compares depression to grief reaction, internalized hostility, and corresponding loss of self-esteem. Freud historically is considered the father of this movement. Depression arises with the loss of an important object or person which generates a low self-esteem. The cognitive theorist hypothesizes that depression occurs because the person, using maladaptive beliefs and thoughts, misinterprets his experiences and world. Beck (1979) states, "The cognitive model postulates three specific concepts to explain the psychological substrate of depression: (1) the cognitive triad, (2) schemes, and (3) cognitive errors (faulty information processing)" (p. 10). The triad involves the patient's negative view of self, the depressed person's tendency to interpret his world and life in a negative way, and to live with a negative view of future. The behaviorist views depression as associated with socio-environmental reinforcement conditions, either aversive or lack of positive reinforcement, which create behavior associated with depression. Lewinsohn (1974) states three major assumptions of behavioral theory of depression:

1. A low rate of response-contingent positive reinforcement (rescorposre) acts as an eliciting (unconditional) stimulus for some depression behaviors such as feelings of dysphoria, fatigue, and other somatic symptoms.
2. A low rate of rescorposre constitutes a sufficient explanation for other parts of the depressive syndrome
such as low rate of behavior.

3. The total amount of resconspose received by an individual is presumed to be a function of three sets of variables: (1) the number of events . . . which are potentially reinforcing (pot re) for the individual; (2) the number of potentially reinforcing events that can be provided by the environment . . . ; and (3) the instrumental behavior of the individual, that is, the extent to which he possesses the skills and emits those behaviors which will elicit reinforce-

ment for him from his environment. (p. 66)

Therefore, when the person receives a low rate of positive reinforce-

ment, he is more likely to exhibit depressive behaviors.

Finally, these three categories of theories are not all inclu-

sive. Surveys of recent literature indicate a strong increase in

studies researching the effect of specific interventions or tech-

niques such as assertiveness, social skills, activity, and pleasant

events upon depression. For example, the interpersonal aspects of

depression have been largely ignored. Various studies (Hersen,

Bellack, Himmelhoch, & Thase, 1984; Paykel, Weissman, & Prusoff, 1978)

have begun to explore social skills and social adjustment in relation
to depression. Also activity, fitness center/aerobics, and running

are said to have positive effects upon mood improvement. This brief
summary of theories indicates the lack of theoretical unanimity which
creates our continued task of exploration and study.

The etiology or causes of depression remain equally uncertain.

Each theory reflects its own concepts of the origin of depression

based upon the different theoretical assumptions and principles.

Endogenous depression is regarded to arise primarily from internal

physiological factors (Beck, 1967). Reactive depressions emphasize

psychological factors or environmental factors as root causes.
Lewinsohn (1974) lists five classes of etiology in the search for cause: physiological, internal psychological mechanism, cognition, interpersonal, and behavioral. Akiskal (1979) makes a distinction between primary depression which arises without pre-existing disorders or is grossly out of proportion to any preceding life event, and secondary depression which is an understandable response to a serious medical, psychological, or social problem. Each has distinct causes. Akiskal presents a variety of reasons or causes: stress, melancholy, social, lack of social support, deficient social skills, developmental object loss, alcohol, family, and many others. Again, depression as a clinical entity presents a variant and diverse entity that is difficult to categorize, classify, and define.

Indeed classification is a difficult problem as one addresses depression. Depression does not present a clear nosological classification. Substantial discrepancies among diagnosticians exist. Beck (1967) presents four pairs of classification: endogenous and exogenous, autonomous vs. reactive, agitated vs. retarded, psychotic vs. neurotic. Other classification categories are manic depressive, reactive or situational vs. chronic, neurotic vs. psychological and biological. Carroll (1975) presents three types of depression as categories: endogenomorphic (both true endogenous and precipitated), neurotic (including chronic characterlogic), and reactive (involving a continuum with normal disappointment). While classification is not identified (Beck, 1967), it has also been noted that diagnostic agreement was considerably improved by formulating operational definitions of the classification categories.
The description of depression using symptoms has been more consistent. Beck (1967) observes that there has been remarkable consistency since ancient times. Lewinsohn (1974) points out that depressed people do certain things. The clinician is able to observe, record, and describe the symptoms which accompany the depressed state. Beck (1967) describes many symptoms: dejected mood, negative feelings toward self, loss of emotional attachments, crying spells, low self-evaluation, negative expectations, self-blame and self-criticism, indecisiveness, loss of appetite, sleep disturbance, fatigability, among others. These are categorized under four headings: emotional, cognitive, motivational, and physical vegetative. These categories became the foundation for the Beck Depression Inventory.

Finally, depth or severity of depression is a dimension that cuts across nosological classifications and diverse diagnoses of same individual. Beck, Ward, Mendelson, Mock, and Erbaugh (1961) sought a consistent standard to measure and diagnose depression for study and treatment particularly in view of the well-known variability of psychiatric diagnosis. They developed criteria of depth or severity based upon personal symptoms and intensity of symptoms of observable behavioral entities.

Definitions

This research project revolves around three basic concepts hereby defined.
energy level, hopes, sadness, apathy with a disregard for or distortion of reality measurable by depth or severity.

**Short-Term**

Short-term hospitalization as a planned element of intervention has increased over the past years. Some psychiatric inpatient programs are based on the concept that short-term and multiple admissions (when necessary) are the most effective. While short-term is not clearly defined, there are patterns which reflect a basic concept. The psychiatrists generally suggest a 3- to 4-week stay. Insurance carriers have limitations on length of stay such as 45 days. Hospital regulations require written justification past 30 days. Therefore, for this study, short-term is defined as less than 6 weeks.

**Multifaceted**

Hammen and Glass (1975) observe that single-dimension approaches are likely to be far less effective than an integration of several orientations considering the complexity of depression. Hospital programs reflect this integration of several orientations and modalities of therapy. For this study, I define multifaceted as the integration of multiple modalities of therapies into a unified treatment program.

**Literature Review**

Depression is a massive topic which continues to generate volumes
of research studies. Yet many questions remain unanswered and the picture remains vague. This literature review is in six general categories: (a) descriptive, (b) time/duration, (c) multifaceted program design, (d) Beck Depression Inventory, (e) treatment outcome studies, and (f) activity-as-treatment studies. I present a discussion on individual articles with a general summary of each category.

Descriptive

Lewinsohn (1974) describes present theoretical assumptions based upon current research. He contends that depression is a deficiency or believed deficiency of reinforcement. He succinctly details the situational requirements and design entities required for further research. He presents a comprehensive summary of present research from the behavioral perspective. He judges that the results of present studies are consistent with the major tenet of the behavioral view of depression, namely a relationship between positive reinforcement and depression. This article presents specific information about the relationship between concrete behavior and activities and depression. This article is an excellent summary of the present behavioral research in depression.

Layne (1983) presents a theoretical research and discussion of the cognitive theorist's assertion that depressed people exhibit cognitive distortion. He contends that the empirical research directly contradicts this assertion. He contends that the evidence indicates a depressed person is more realistic than a non-depressed person.
Keller (1983) presents a study that examines the relationship between depressed patients' levels of dysfunction and their responses to cognitive forms of therapy. He divided 19 depressed community volunteers who received application of cognitive group therapy. While results support the thesis that dysfunctional attitude level acts as a general psychopathological indicator, the relationship between cognitive therapy effectiveness and the level of dysfunctional belief remains equivocal. The author calls for further study.

These articles, along with the vast research in psychotropics, continued studies in biological etiology, and integration of approaches such as biobehavioral (Akiskal, 1979), indicate the continued need for research to clarify relationships between treatment modalities and specific aspects of depression.

**Short-Term Treatment Facilities**

The literature presents little material directly related to the length of hospital stay and treatment effectiveness. Inquiry made to two Medical Directors of psychiatric hospitals with a short-term philosophy presented no additional material. I present here articles on short-term treatment in related areas.

Abbott (1980) presents a study of short-term psychotherapy for the spouse of a myocardial infarction male patient. The results are equivocal both for treatment effect and causes of psychological reactions. The author focuses upon the treatment for psychological reactions of the trauma of a myocardial infarction upon a spouse.

Barrera (1978) addresses the use of brief group therapy for
treated depressed outpatients. He used 20 clients assigning half to immediate therapy and half to delayed treatment. The results do not support the effectiveness of immediate therapy. The author appears to change the issue from initial focus of brief group therapy to an issue of immediate versus delayed treatment. However, the issue here related to number of therapy sessions.

Weissman, Klerman, Prusoff, Sholomskas, and Padian (1981) present a longitudinal study of acutely depressed patients who received drug therapy and/or interpersonal psychotherapy in a short-term treatment trial. The authors indicate that results showed maintenance after one year with no significant differences in treatment effects of different treatment groups. This study does indicate efficacy of short-term, but short-term is seen as 4 months.

This literature review presents no direct research on the efficacy of short-term hospital programs and their treatment effects. The studies presented indicate support for short-term therapy (brief therapy). Further research is necessary to study short-term vs. long-term measuring differential effect. A key question is: Do short-term therapy results generalize to short-term hospitalization?

**Multifaceted Inpatient Treatment Programs**

Articles related to multifaceted or integrated treatment programs are generally case studies rather than studies of a hospital program as a unit or studies of individual modalities in relation to the whole.

Goldstein (1978) presents a case study of a 32-year-old mother
with a diagnosis of agoraphobia. Goldstein used paradoxical intention and relaxation as treatment for this outpatient. She reported decrease in anxiety and increase in positive experience including flying.

Whipple and Manning (1978) present a multifaceted program study for anorexia nervosa. Upon hospitalization and evaluation, the patient is placed on a behavior-oriented weight gain program. The patient also receives daily supportive psychotherapy with the same person who controls the weight program. Third, the family receives therapy to correct maladaptive interaction patterns. This is followed with outpatient treatment. The authors claim that this problem requires multifaceted treatment because it is so difficult and life-threatening. They do not present research data with analysis.

Moore (1981) presents an investigation of the effects of a holistic approach to psychotherapy referred to as "triaditic" therapy. The population was 16 members of the hospital staff, both recovery alcoholics and non-alcoholics. The non-alcoholic group showed statistically significant changes in a positive direction on 21 measures. The recovering alcoholic group showed statistically significant changes on 6 measures. The comparison group showed significant changes on two measures in a positive direction and two in a negative direction. They had received yoga, exercise, and guided imagery as treatment. Two questions are left with this study. First, how would these results compare with a one-treatment group for each modality? Second, why is there a difference between recovery alcoholics and non-alcoholics?
Kramer (1983) presents the case study of a 22-year-old dying patient with relapsing polychondritis and depression treated in liaison, consultation, and outpatient settings by one psychiatrist using various techniques. This article presents a case study of Kramer's therapeutic activities as he works to assist the patient and the family, as her social system, to adjust to death. He discusses techniques used and ways to integrate the medical and psychotherapeutic models.

Withersty, Shemo, Waldman, and Stevenson (1980) present an evaluative study of a new conjunct psychiatric-medical inpatient unit using the diagnosis of depression. The authors found no statistically significant difference in treatment effects of patients in a new unit compared with patients from a psychiatric unit. This article addresses the question of unit design more than multifaceted modality.

Finally, Ruch (1984) presents a fascinating article about the multi-disciplinary approach addressing the issue "when too many is too much" (p. 18). The author addresses the effectiveness of psychotherapy with a multi-disciplinary team calling for a clear definition of roles to integrate a powerful team. He has concerns when cross-disciplinary members of a team attempt to do more than their assigned duties, such as a psychiatric nurse doing psychotherapy.

These articles present equivocal data concerning the effectiveness and efficacious nature of multifaceted forms of treatment. Cases are used to argue effectiveness of multiple forms of treatment. The issue concerning multiplication, saturation, and diminishing
returns of the multifaceted approach remains unanswered. Questions also remain about the effectiveness of an individual modality in the context of the whole. I will address these issues in the second aspect of my research.

**The Beck Depression Inventory**

This research project uses the Beck Depression Inventory as the instrument for measuring the depth of depression on a pre-post test administration.

Beck and Beamesderfer (1974) present an excellent descriptive explanation of the Beck Depression Inventory. The authors view the diagnostic reliability problems and prevalence of depression as the basis for this instrument. They argue that the Beck Depression Inventory provides a standardized consistent measure that does not rely on the theoretical orientation of the interviewer. They observe that measurement of depth is important because symptoms increase with severity, there is a step-like movement from non-depressed to severely depressed, and the more depressed a person is, the more intense a particular symptom. The Beck Depression Inventory presents 21 symptom-attitude categories consisting of 4 or 5 self-evaluative statements assigned values of 0 to 3. The author presents reliability information from the use of Kruskal-Wallis Non-Parametric Analysis of Variance indicating that all categories show a significant relationship with total score. Split-half reliability yielded a reliability coefficient of 0.86; a Spearman-Brown correction for attenuation raised the coefficient to 0.93. The authors also present
concurrent validity studies indicating .65 correlation with clinician ratings and .75 with MMPI D-scale. In a general practice population, a correlation between Beck Depression Inventory and depth of depression of .73 was found. They found strong support for all their hypotheses pertaining to construct validity. This article provides extensive and strong material concerning need, design, reliability, and validity supporting the use of this instrument for the research of depression.

Beck, Ward, Mendelson, Mock, and Erbaugh (1961) describe the development of the Beck Depression Inventory which is designed to measure severity or depth of depression. They present similar reliability and validation information that support the Beck Depression Inventory. The authors present four advantages for using the Beck Depression Inventory in research: (a) it addresses the problem of variability of clinical judgment providing a standardized, consistent measure; (b) it is far more economical than a clinical interview; (c) the numerical score provides the basis for comparison of data; and (d) since it reflects changes in depth, it provides an objective measure of improvement due to treatment. It is these advantages which influenced my choice of the Beck Depression Inventory as the instrument of choice for this project.

Derogates, Lipman, Rickels, Uhlenhurh, and Covi (1974) present a descriptive report of the development, rationale, and validation of the Hopkins Symptom Checklist, a self-report symptom inventory. The authors construct an integrative series of rating scales to assist
with the accurate documentation of the clinical status of the patient(s). I share the concern of Beck (1967) that the use of adjectives frequently used by depressed patients to describe their symptoms makes the measurement focus on one element to the distortion of others. The failure of the test to report other dimensions probably impairs its usefulness.

Zung (1965) presents his Self-Rating Depression Scale. He desired this scale for assessing depression in patients whose primary diagnosis is a depressive disorder. This scale lacks the simplicity and the quantifiability necessary for research. The author does not present any data on reliability and validity.

Wechosicz, Muir, and Cropley (1967) present a factor analysis of the Beck Depression Inventory based upon 254 depressed inpatients. They found three factors: (a) guilty depression, (b) retarded depression, and (c) somatic disturbance. They call for further factor analytic studies which should include behavioral and physiological factors.

Bumberry, Oliver, and McClure (1978) present their validation research of the utility of the Beck Depression Inventory for survey use in a college population. The authors used a psychiatric rating of depth of depression as criterion. The basic finding is that the Beck Depression Inventory is a valid instrument to obtain a measurement of depression in university students. They found a Pearson product-moment correlation coefficient of .77 between scores on the Inventory and primary psychiatrists' ratings. I agree with their call for longitudinal studies. It also is generalizable to college students only.
Hammen (1980) attempts to address the criticism about using college students for depression studies. The chief purpose of this study was to describe the diagnostic and clinical features of depression. The author correctly calls for further research information as a basis for subject selection, clinical inference, and generalization.

Gallagher, Nies, and Thompson (1982) present a study of the reliability of the Beck Depression Inventory to assess depression in persons over 60. The reliability estimates were sufficient to suggest that the Beck Depression Inventory is a useful instrument to screen depressed elderly.

Strober, Green, and Carlson (1981) present a similar study of the utility of the Beck Depression Inventory with psychiatrically hospitalized adolescents. The data affirm that the Beck Depression Inventory is a psychometrically sound descriptive instrument for research on depression in adolescents.

The Beck Depression Inventory is a highly reliable instrument with sound validity evidence which measures in an objective and verifiable manner the behavioral manifestations of depression providing a measurement of depth and severity. Since it measures severity and depth, it provides information across nosological categories and provides a solution to problems of psychiatric diagnosis of depression. Therefore, it provides an excellent measurement instrument for research in treatment effects on depression.
Treatments Studies of Depression

Here I will present studies of therapeutic interventions and treatment modalities. The research materials tend to focus upon an outpatient client population.

McLean and Hakstain (1979) present a study of 178 moderately depressed outpatients who were given 10 weeks of psychotherapy, behavior therapy, drug therapy, or relaxation therapy which they considered the treatment control condition. The study results indicated that behavior therapy was superior, that psychotherapy performed most poorly at end of treatment and 3-month follow-up evaluation, and that drug therapy and relaxation therapy provided no significant differences. They report that most clinically depressed individuals show improvement within 3 months. These results raise the issue of short-term in light of the reported information of improvement within 3 months.

Wilson, Goldin, and Carbonneau-Powis (1983) present a study of 25 depressed subjects assigned to behavioral treatment, cognitive treatment and no treatment conditions using the Beck Depression Inventory. The results, the authors claim, provide additional support for the use of short-term psychological interventions in the management of unipolar, non-psychotic depression. They call for further research to identify the aspects of cognitive and/or behavioral intervention that cause change.

Zeiss, Lewinsohn, and Munoz (1979) present a research study of depressed outpatients who received either interpersonal skills,
pleasant events, or cognitive therapy with half the patients in each
treatment modality and half receiving delayed treatment. Results
indicate that all treatment modalities significantly alleviated
depression. They observe that no treatment modality had specific
impact upon the variables most relevant to its treatment format.
They argue, and I agree, that research on treatment outcomes in de-
pression needs to assess the specific impact upon the labeled treat-
ment modality as well as assessing depression itself. They make this
call because, although all treatments were successful in alleviat-
ing depression, none had a treatment-specific effect on a single
class of behaviors.

Hersen et al. (1984) present a study that contrasts the treat-
ment effects of four treatments for 120 female unipolar (non-psychotic)
outpatients. The four treatment forms are: (a) social skill plus
placebo, (b) social skills plus amitriptyline, (c) amitriptyline,
and (d) psychotherapy plus placebo, using experienced therapists for
12 weeks of initial therapy and a 6-month maintenance program.
Patients in each treatment group showed marked improvements in de-
pressive symptoms. Therefore, the authors call for further research.
The research did not include a control group to test for spontaneous
remissions.

Brown and Lewinsohn (1984) conducted a study that examined the
efficacy of a psycho-educational approach in treating unipolar de-
pression. The authors observed that the paractitioner is faced with
choices between a range of promising conceptual formulations and
therapeutic approaches. The main focus of this study was to design
treatment for depression that would address several specific target behaviors focusing on social skills, thinking, pleasant activities, and relaxation. They assigned the population to four conditions: class, individual tutoring, minimal contact, or delayed treatment group. The results indicate that this approach was effective in alleviating unipolar depression. They argue that this approach is cost-effective. They call for further research that will cross-validate their findings and will further delineate treatment effects.

McKnight, Nelson, Hayes, and Jarrett (1984) address the issue of matching treatment modalities to specific problem areas. They studied two specific areas: social skills and irrational beliefs. The results show that the subject experienced greater improvement when specific intervention was directed at the correlated problem area. The authors also claim, with foundation, that the control group indicated it is the relationship between assessment and treatment that is critical in successful outcome. This study presents a beginning at addressing target behavior and targeted effects of individual treatment modalities. One area in which further study is crucial is the hospitalized patient in a multifaceted program.

Gotlib (1975) constructs a study designed to examine the relationship between depression and self-reinforcement in interpersonal interaction. The study involved 19 depressed and 12 non-depressed inpatients and 16 non-depressed non-medical hospital employees. The results provide only limited support for theories that self-reinforcement is specific to depression. Further, using covariants erased the main effects of social skill training. The
results indicate a separation between a low rate of self-reinforcement and social skill. The evidence appears equivocal requiring further research. The three population groups make for complicated analysis and some confusion.

Lewinsohn, Mischel, Choplin, and Barton (1980) conducted a study to disentangle the influence of social competence and self-perception in depressives. The results indicate that the depressed are rated, self and others, less socially competent. The depressed are also more realistic in their self-perceptions than non-depressed. In fact, the realism tended to decrease with treatment. The authors raised legitimate questions about the theories that unrealistic self-appraisals are a basic ingredient of depression and that realism is the crux of appropriate affect.

Paykel, Weissman, and Prusoff (1978) present a study concerned with the correlation between social adjustment and symptom ratings, namely to examine the relationship between the degree of social dysfunction and the symptoms of depression. The study presents a lack of correlation between the two fields of assessment during acute illness. They did discover that specific symptoms of depression related more highly to certain social adjustment factors. Thus, the severity of symptoms during actual illness is a very poor guide to social pathology. Social maladjustment, they claim, is manifest only when the patient is in the community and not relevant for a hospital setting. This is an assertion that needs to be demonstrated. Finally, the attempt to correlate specific symptoms with specific social maladjustment behaviors provides a corresponding example of the second
aspect of this study where I attempt to correlate specific categories of the Beck Depression Inventory to specific modalities of treatment.

Hoehn-Hyde, Schlootnann, and Rush (1982) conducted a study of the perception of social interaction by depressed psychiatric patients. The population involved 20 depressed females, 20 depressed females in remission, and 20 female control subjects. While results about the depressed persons support cognitive theory, they also suggest that depressed patients can perceive neutral interactions and positive interactions as non-depressed persons perceive them. The authors claim that this challenges the basic hypotheses of cognitive theory.

Sanchez and Lewinsohn (1980) conducted a research of 12 depressed outpatients monitoring the level of depression and emitted assertive behavior. They discovered that depression and assertive behavior were highly correlated in a negative manner. They also discovered that emitted assertive behavior predicted depression levels for the next day but the reverse is not true. The challenge would be to conduct a similar study for an inpatient treatment program.

Barbaree and Davis (1984) conducted an investigation examining assertive behavior, self-expectations, and self-evaluations of assertive behavior as it correlates with self-reported symptomatology using the Beck Depression Inventory in a university population. The findings indicate that depressed persons with no prior training reported more negative self-expectations and self-evaluations. It was also demonstrated that discrimination training increased
effectiveness of assertive behavior and self-report ratings of all subjects but especially depressed persons. The articles simply attempt to correlate factors of depression. The next step is the matching of specific therapy forms to effectively treat concrete aspects of depression.

Lewinsohn and Libet (1969) describe a study to test the hypothesis that depression intensity is a function of positive reinforcement. The authors claim that a significant association between pleasurable activities and mood exists. The results of this study showed that pleasurable events and activities had positive and significant effect upon depression severity. This has potential clinical importance as the therapist designs treatment interventions for depressed individuals and family. The positive effect of activity raises research questions about using activity in the treatment of depression in a psychiatric inpatient setting.

Rehm (1978) attempts to assess the relationship between mood and events both pleasant and unpleasant. This study shows a positive correlation between mood and pleasant events. The potential clinical value to the self-monitoring of unpleasant and pleasant events is important and valuable.

Biglan and Craker (1982) present a study of the effects upon depression of increasing pleasant activities. An increase in pleasant activities did not produce improvement in self-monitored mood. These results are different than the claims of other studies (Rehm, 1978; Lewinsohn et al., 1979) and cast doubts about the sufficiency of pleasant-activity increase as treatment for depression.
The differing results suggest a need for further research.

Harmon, Melson, and Haves (1980) conducted a study to investigate the relation between pleasant activity and mood. The results support those studies which find a positive correlation between pleasant activity and mood. The results specifically indicate that self-monitoring of mood or activity produces an increase in self-reported activity and decrease in depressed mood. Self-monitoring of activity was superior to self-monitoring of mood in producing increased activity. The authors caution that it is premature to claim that self-monitoring is sufficient treatment for depression. Rather, it may become a useful element within other intervention strategies. It is, they believe, sufficiently reactive to use as a tool in further studies.

The materials in this section range from the comparison of treatment theories to the attempt to correlate specific social adjustment factors to specific depressive systems. Results of a massive number of studies remain equivocal. They do produce two interrelated factors: the effectiveness of multiple strategies for depression and the need to develop research design to analyze which specific interventions will affect positive change in which depressive symptoms. Further research should address the issue of specification. The research question of this project about multifaceted treatment is directly related to this issue of specification.

**Physical Activity as Treatment**

The physical fitness craze has mushroomed in today's society.
Running and jogging are purported to enhance mood elevation and create natural "highs". Energy level is one symptom of depression and its depth or severity. Greist, Klein, Eischens, Paris, Gurman, and Morgan (1979) present an article "Running as Treatment for Depression". Physical exercise may be well documented as an agent to increase mood elevation or generally just feeling better. This does not mean it is generalizable to treatment situations or even as a treatment modality within an inpatient psychiatric multifaceted program.

Greist et al. (1979) present a study where they attempt to determine whether physical exercise, and explicitly running, has a positive influence upon neurotic or reactive depression of those seeking treatment. The study used three groups: running, time-limited psychotherapy, and time-unlimited psychotherapy. The results indicate that running is as effective in reducing depressive symptoms as both time-limited or time-unlimited psychotherapy. The authors are correct in observing that this form of treatment is cost-effective. This approach may also serve as excellent maintenance procedure. They also correctly term this approach as experimental requiring further research and development. The study raises interesting hypotheses about running as a therapeutic intervention. It also raises questions regarding running as therapy within an inpatient multifaceted hospitalized program.

Lion (1978) discusses a study of the psychological effects of jogging with three chronic psychiatric patients in a halfway house in comparison to three patients of the same program who received the same amount of attention. The author observes that, while
recreational therapy is an integral element of institutionalized mental health settings, few studies have been conducted to assess the actual value. This study indicates that even minimal exercise for brief times alleviated levels of anxiety. Further research with a larger population size or tighter experimental controls is suggested.

Collingwood (1976) presents a study of the effects of physical exercise upon behavior and self-concept. The study involved 25 young male rehabilitation clients who participated in a 4-week physical training program. The subjects demonstrated increases, over the control groups, in many attitudes and behaviors in personal self-concept. This study remained broad in its scope. Therefore, future studies need to specify concrete clinical behavior and attitude which are affected by physical exercise.

Folkins (1976) designed a study to present evidence about the relationship between physical exercise and mood using a subject population of 36 adult men at high risk of coronary artery disease, assigning them to either exercise or no exercise. The subjects experienced improvements in anxiety and depression as well as increase in physical fitness.

Sharp and Reilly (1975) designed a study to determine the relations between aerobic capacity and selected personality traits as measured by the Minnesota Multiphasic Personality Inventory. The author used 65 male college students ranging from 18 to 23 years of age. The author discovered a positive correlation between aerobic capacity and selected items on the Minnesota Multiphasic Personality Inventory such as the K and E Scales.
Carter (1977) studied whether physical exercise increased a person's happiness. The author did find a positive correlation between exercise and happiness.

These articles study the relationship between mental health and physical exercise. The results indicate a positive correlation between physical exercise and the increase in mood, self-concept and other concepts associated with mental health. Greist et al. (1979) found that running had a positive effect upon depression. The issue of generalization to inpatient psychiatric populations prompts further research. Lion (1978) studies the psychological effects of jogging on residential chronic psychiatric populations. These results raise the question of generalization to a population of an inpatient psychiatric unit with a short-term multifaceted philosophy. These results provide some background for the present research question.

Summary

This literature review addresses issues related to research on treatment effects of a short-term multifaceted facility upon depression as measured by the Beck Depression Inventory. I make the following observations and conclusions based upon these articles:

1. The subject of depression is a complicated subject which makes research design and study complex, often leaving equivocal results and limiting our understanding. (Lewinsohn, 1974)

2. The field of clinical therapy has moved toward brief or short-term therapy. There is very little research
data to find on the subject of length as it relates to hospital stays in general and as it relates specifically to hospital stays for depression.

3. The multifaceted or integrated approach continues to gain support. The initial data support this move to a multifaceted treatment program to therapeutically address the complex psychological problems. This looks promising also for the nosological category of depression.

4. The multifaceted or integrated approach raises issues of specificity, namely the application of specific modalities to specific symptoms or behaviors or cognitions.

5. Physical exercise appears to have a positive correlation with increase in mood and self-concept and improved mental health. Further research is needed both in general and specifically in relation to inpatient short-term multifaceted hospitalization.

6. The research material focuses generally upon outpatients and often university students. This raises serious questions about the generalizability of results especially to inpatient populations.

7. Frequently, the nosological classification selected for study of treatment effects is unipolar depression. Depression, as noted above, presents difficulty in classification and diagnosis often presenting
various nuances. For this reason, the Beck Depression Inventory presents a unique form of measurement.

8. The Beck Depression Inventory is a highly reliable and valid instrument measuring the intensity of depression. It is a sensitive instrument of measurement and can be a useful tool for research to test treatment effects upon depression.

Thesis Definition

This research study was designed to address the issue of treatment effects of a short-term multifaceted program upon depression. This study addresses four particular issues providing new and/or additional information.

First, this study provides information regarding the treatment effects of a short-term hospital stay upon depression. Studies (Beck, 1967; McLean, 1979) indicate that depression episodes last 3 months among outpatients and 6.3 months among inpatients with treated patients showing considerable improvement in 3 months. Studies of short-term or brief psychotherapy with outpatients (Abbott, 1979; Barrera, 1979) indicate support for the effectiveness of short-term or brief therapy. Research data are not available concerning the effects of the length of hospital stay upon depression. The discrepancy between short-term hospitalization and prognosis figures of 3 to 6 months needs to be addressed.
Second, Hammen et al. (1975) observe that depression is a set of complex phenomena. The authors call for the integration of several orientations as the most effective therapeutic approach. This call generates the need for greater specification of which treatment modalities are most effective for which symptoms. This information will aid future treatment planning in a multifaceted program.

Third, treatment staff was requested to specify which treatment modalities were expected to impact which categories on the Beck. Based upon this rating, fitness center/aerobics were predicted to impact upon the categories of sleep disturbance, fatigability, and loss of appetite. The issue of physical exercise is the chosen modality for the multifaceted study.

Finally, this research project provides further information regarding the treatment of depression. McLean (1979) points out the need for further controlled investigations as new theoretical models are available. This study adds information about the treatment of depression in a short-term multifaceted setting.

Therefore, this information will be useful in three concrete areas: (a) it provides information upon which to build concrete criteria for effective treatment design for patients with depression, (b) it provides information upon which psychiatric facilities and payment carriers may build cooperative guidelines for treatment efficacy and cost-effectiveness in the treatment of depression, and (c) it provides information for evaluation of multifaceted programs and for multifaceted treatment program design.
CHAPTER II

RESEARCH METHODOLOGY

The research occurred in a psychiatric hospital in which the psychiatrists are private physicians who have admitting privileges and serve on-call in the evenings. They also are the psychiatric members of the team since the hospital is structured around a team approach. Psychological testing is conducted only upon written orders of the admitting psychiatrist.

The research is designed as a descriptive analysis rather than an experiment. I designed the project to analyze what is presently occurring within the inpatient psychiatric care of the depressed person at this hospital.

Two components comprise the heart of this research project: (a) the treatment effects of a short-term hospitalization, and (b) the specification of treatment modalities in relation to symptoms of depression in the context of a multifaceted approach. The research milieu includes the complexity of depression, the structure of the hospital setting, and specific issues such as diagnostic consistency.

The Design

1. The Pre-Post Test Design with the written self-administered Beck Depression Inventory (see Appendix E). The Pre-Post Test Design is common in studying the treatment effects, approaches, or modalities upon
depression (Brown et al., 1984; Wilson et al., 1983). The Beck Depression Inventory is a powerful instrument with the ability to detect clinical changes in the depth of depression (Beck et al., 1961). In contrast, factor analysis of MMPI Depression Scale presents information that raises questions about its usefulness for research due to its heterogenous nature (Beck, 1967). The Adjective Checklist presents problems since it primarily measures subjective feelings which is only one aspect of depression. Therefore, I chose the Beck Depression Inventory which is a valid instrument to measure depth or severity of depression across nosological classification. Finally, I used the Beck Depression Inventory in conjunction with the hospital's use of the Fast Test Computerized Testing Service. Fast Test uses the 1961 version of the Inventory with two minor changes of combining two statements on one category and creating two out of one or another. These changes did not affect the scoring.

2. Population is defined as all patients admitted to adult inpatient units with an admitting diagnosis of Dysthymic Disorder or Major Depression.

3. The Inter-Rater Reliability concept was used to obtain a scattergram rating for correlation of modality of therapy with specific categories of the Beck Depression Inventory. This study is designed to relate treatment
modalities to change in symptoms or measured behavioral output. This will provide information for further research.

4. The Correlated t Test along with percentage of change will provide basic data analysis. Comparisons of two diagnoses of severity groups, and physical exercise vs. non-exercise will be analyzed.

**Procedures for Beck Administration**

The project commenced upon presentation of the Thesis Question and Design (see Appendix B) to the Chairperson of Research at the hospital. I sent appropriate memos requesting assistance of administrators, psychiatrists (4 of 6 chose to refer patients), psychologists, Admissions and Evaluation Center personnel, and floor nurses.

1. The Admissions and Evaluation Center provided me with daily lists of all patients, including the name of the admitting psychiatrist, admitted under a Dysthymic or Depression Disorder.

2. Requests for testing orders were placed upon the charts of participating patients.

3. The Beck Depression Inventory was hand-administered in the testing center by the person responsible for test administration upon receipt of the testing order. The Administrator explained the project to the subject and requested the subject to sign an Informed Consent Form (see Appendix C) prior to administration. (I placed the results on the computer for official hospital
The hand-administration was necessary because the computer did not print raw data.

4. Requests for re-administration prior to discharge were then placed on the charts.

5. The second administration of the Beck Depression Inventory was hand-administered the day of or the day prior to discharge. It was administered on the unit by the floor staff.

Procedure for Beck Depression Inventory/
Treatment Modality Study

I chose 14 staff with representatives from the various disciplines on the teams from each adult unit floor. The persons who participated are responsible for making treatment plans including assignments to treatment modalities. I took these steps.

1. The modalities were chosen using the terminology prevalent during treatment planning and therapy assignment. I excluded medical psychotherapy, chemical therapy, individual therapy, and group therapy because they are common to each treatment plan of each patient.

2. I sent a memo (see Appendix B) explaining the project to the 14 selected staff of various disciplines. I attached a copy of the Beck Depression Inventory. The person was requested to identify which modalities in his opinion would effect a change in each set of questions on the Beck Depression Inventory. (The
Beck Depression Inventory for this segment was taken from a computer testing services manual. One set of questions was missing. Therefore, the raters rated only 20 of the 21 categories. This error was corrected before the administration of The Beck Depression Inventory to subjects. 

3. The rating scale was returned by 65% of the staff (it was difficult to follow-up since names were not required) and a scatter chart was constructed to show the patterns and perceptions. (See Appendix A.)

These procedures were constructed around the basic hospital procedures. The staff was cooperative, and I monitored the process very closely. Yet, three basic problems arose: (a) the time from admission to the initial test administration at times exceeded the 3-day expectation, (b) the patients who signed out Against Medical Advice (AMA) did not receive the Post Administration, and (c) two patients were discharged prior to final administration. I will discuss these issues more fully with the evaluation of the results. Suggestions for subsequent studies will also be discussed in the evaluation.

Demographic Data

The sample size is 12 drawn from a population of 107 patients admitted to this hospital between August 21, 1984 and October 4, 1984. The population is 5 males and 7 females, 8 white and 4 black, and 2 married, 4 single, 3 divorced, 2 widows, and 1 separated. For 5,
this was their first admission. Six had previous admissions at this hospital, and one had a previous admission at another psychiatric hospital. The subjects ranged in age from 18 to 79, with an average age of 41 years.

The average hospital stay was 26½ days, ranging from 8 days to 42 days. (One subject was excluded because the person was hospitalized for 44 days; another patient was excluded because she was hospitalized for 62 days. Both exceeded the definition of short-term.) Seven subjects were admitted with a primary diagnosis of Dysthymic Disorder. Five subjects were admitted under a primary diagnosis of (Major) Depression. The multifaceted treatment plan did not include fitness center or aerobics for 6 subjects, while 6 subjects were assigned to fitness center and/or aerobics. I also divided the population into 4 groups: not depressed - 0-9, mild depression - 10-15, moderate depression - 16-29, and severe depression - 29-63. These categories represent scores of the Beck Depression Inventory, which is scored on a scale of 0-63. There exists different severity category breakdowns. I used the basic system of Fast Test which is the computerized testing used at the hospital. The subjects were then separated according to depth/severity of depression categories: not depressed - 4 subjects, mildly depressed - 3 subjects, moderately depressed - 3 subjects, and severely depressed - 2 subjects.

The subjects are assigned to a multifaceted treatment program. They participate in Milieu Therapy, have contact with their individual worker (Mental Health Technician) and are generally assigned to recreational activities. Subjects receive drug treatment as
assigned by the psychiatrist. The subjects also participate in Medical Psychotherapy (5 to 7 per week) with their psychiatrist, Individual Therapy (generally 2 or 3 times per week for 30 minutes), and Group Therapy (3 times per week for 60 minutes). The subjects are assigned by the Team to appropriate specialized modalities such as Occupational Therapy, Music Therapy, Assertiveness Training, Fitness Center, Aerobics, Parenting Skills, and others to meet their specific needs. The charts do not provide clear information about the time spent attending assigned activities. Therefore, variability does exist in both time spent in therapy and specific types of therapy attended.

Finally, my hypothesis that short-term multifaceted treatment programs for inpatient subjects is efficacious for depression. This study is structured to generate data to indicate existing efficacy of short-term treatment programs and to generate directions for further research.
CHAPTER III

RESULTS

Data were analyzed using the Correlated t Test to test the hypotheses that short-term multifaceted inpatient treatment programs will have a positive treatment effect upon depression showing a decreased severity or depth and that subjects assigned to specific modalities of therapy will show greater positive effects upon selected inventory categories than subjects not assigned. The data also will be used to analyze the difference between various sub-groupings of population. This analysis will provide material to evaluate the confounding effects upon the results. Finally, since the Pre-Post Test of a Descriptive Analysis study does not necessarily infer cause, it is helpful to observe the raw data (see Table 1).

Each patient showed improvement except one who remained the same. One subject showed drastic improvement. Two subjects showed minimal improvement, namely 1 or 2 points although both are involved in the delayed first administration which we will discuss later. The subject population broke down according to severity at first administration in this manner: 4 - not depressed; 3 - mildly depressed; 3 - moderately depressed; and 2 severe depression.

Using the Correlated t Test, the depth of depression had shown a statistically significant decrease in depression because 

\[ t_{\text{crit.},.05} = 2.20 \text{ with } t_{\text{obt.}} = 2.35. \]

Therefore, the null hypothesis is rejected.
<table>
<thead>
<tr>
<th>Age (Years)</th>
<th>Floor</th>
<th>Days</th>
<th>Dysthymic</th>
<th>Major Depression</th>
<th>Fitness Aerobics</th>
<th>Pre-Diff</th>
<th>Post-Diff</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>64</td>
<td>4</td>
<td>42</td>
<td>X</td>
<td></td>
<td></td>
<td>23</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>57</td>
<td>4</td>
<td>13</td>
<td>X</td>
<td></td>
<td></td>
<td>15</td>
<td>6</td>
<td>9</td>
</tr>
<tr>
<td>59</td>
<td>4</td>
<td>34</td>
<td>X</td>
<td></td>
<td></td>
<td>40</td>
<td>9</td>
<td>31</td>
</tr>
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<td>4</td>
<td>38</td>
<td>X</td>
<td>X</td>
<td></td>
<td>6</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>26</td>
<td>2</td>
<td>23</td>
<td>X</td>
<td>X</td>
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<td>17</td>
<td>5</td>
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<td>4</td>
<td>8</td>
<td>X</td>
<td></td>
<td></td>
<td>10</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>*24</td>
<td>4</td>
<td>28</td>
<td>X</td>
<td>X</td>
<td></td>
<td>9</td>
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<td>0</td>
</tr>
<tr>
<td>*40</td>
<td>4</td>
<td>23</td>
<td>X</td>
<td></td>
<td></td>
<td>17</td>
<td>12</td>
<td>5</td>
</tr>
<tr>
<td>*24</td>
<td>2</td>
<td>26</td>
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<td>X</td>
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<td>3</td>
<td>1</td>
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<td>21</td>
<td>4</td>
<td>24</td>
<td>X</td>
<td>X</td>
<td></td>
<td>6</td>
<td>1</td>
<td>5</td>
</tr>
</tbody>
</table>

Average: 40.8 26.5 15.33 8.16 7.17

*These patients were administered the Beck for the first time more than 7 days following admission.
The average time from admission to the first administration was 7.75 days. Eight subjects had taken the Beck Depression Inventory within 7 days for an average of 4.41 days. Four subjects were delayed 12, 13, 15, and 17 days (see Table 1). This delay was due to such factors as AEC overload and unexpected delays. The 8 subjects show a statistically significant treatment effect. (See Table 2 for all statistically significant and percentage data.) On the other hand, the population with late administration of the Beck Depression Inventory does not show a statistical significance of treatment effect. This raises some obvious evaluation questions which I will address in the next section.

Further, 5 subjects were admitted under a primary Depression diagnosis, and 7 were admitted under a Dysthymic Disorder diagnosis. Both Dysthymic Disorder subjects and Major Depression subjects show a statistically significant treatment effect.

Next, the Milieu Therapy is assumed to be a constant and therefore not account for change. Yet subjects came from two different floors. The fourth floor has 9 subjects. These subjects indicate a statistically significant treatment effect. On the other hand, the second floor has 3 subjects. These subjects did not show statistically significant treatment effect although the small population provides caution in our conclusions. It does suggest that a research study of milieu of the two floors may prove interesting and profitable.

Finally, the multifaceted aspect of this study presents two sets and types of data information. First, the Inter-Rate Scatter (see
## Table 2

Comparison Chart of Statistical Significance and Percentage of Change

<table>
<thead>
<tr>
<th>Category</th>
<th>Population</th>
<th>% Decrease</th>
<th>t_{obt.}</th>
<th>t_{crit., .05}</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depth of Depression</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not Depressed</td>
<td>4</td>
<td>48%</td>
<td>2.04</td>
<td>2.78</td>
<td>Retain</td>
</tr>
<tr>
<td>Mild Depression</td>
<td>3</td>
<td>46%</td>
<td>4.43</td>
<td>3.18</td>
<td>Reject</td>
</tr>
<tr>
<td>Moderate Depression</td>
<td>3</td>
<td>45%</td>
<td>4.33</td>
<td>3.18</td>
<td>Reject</td>
</tr>
<tr>
<td>Severe Depression</td>
<td>2</td>
<td>54%</td>
<td>1.50</td>
<td>4.30</td>
<td>Retain</td>
</tr>
<tr>
<td>Treatment Modalities Specification</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assigned to Fitness Center/Aerobics</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full Scale</td>
<td>6</td>
<td>48%</td>
<td>2.40</td>
<td>2.57</td>
<td>Retain</td>
</tr>
<tr>
<td>Three Inventory Categories</td>
<td>6</td>
<td>43%</td>
<td>1.92</td>
<td>2.57</td>
<td>Retain</td>
</tr>
<tr>
<td>Not Assigned to Fitness Center/Aerobics</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full Scale</td>
<td>6</td>
<td>50%</td>
<td>3.25</td>
<td>2.57</td>
<td>Reject</td>
</tr>
<tr>
<td>Three Inventory Categories</td>
<td>6</td>
<td>80%</td>
<td>2.83</td>
<td>2.57</td>
<td>Reject</td>
</tr>
<tr>
<td>Admitting Diagnosis</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Major Depression</td>
<td>5</td>
<td>26%</td>
<td>3.28</td>
<td>2.78</td>
<td>Reject</td>
</tr>
<tr>
<td>Dysthymic Disorder</td>
<td>7</td>
<td>72%</td>
<td>2.68</td>
<td>2.45</td>
<td>Reject</td>
</tr>
<tr>
<td>Floor Milieu</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fourth Floor</td>
<td>9</td>
<td>53%</td>
<td>3.08</td>
<td>2.31</td>
<td>Reject</td>
</tr>
<tr>
<td>Second Floor</td>
<td>3</td>
<td>39%</td>
<td>2.10</td>
<td>4.30</td>
<td>Retain</td>
</tr>
<tr>
<td>Time of First Administration</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Within Seven Days</td>
<td>8</td>
<td>63%</td>
<td>3.18</td>
<td>2.36</td>
<td>Reject</td>
</tr>
<tr>
<td>After Seven Days</td>
<td>4</td>
<td>22%</td>
<td>1.96</td>
<td>3.18</td>
<td>Retain</td>
</tr>
</tbody>
</table>
Appendix A) depicts the staff's specification of treatment modalities of a multifaceted program to symptom categories of depression found on the Beck Depression Scale. This rating scattergram provides an overall picture. Numerous general observations can be made. Psychodrama is perceived as powerful and influential for many symptoms with High Functioning Occupational Therapy, High Functioning Music Therapy, and Anger Therapy being considered important. Leisure Counseling and Parenting Skills are associated very little with categories on the Beck. Categories such as guilt and weight loss do not have modalities associated with them. I chose to study the treatment effects of Fitness Center/Aerobics upon the three Beck categories of sleep disturbance, fatigability, and loss of appetite. Eight or nine staff members specified these modalities as effecting these three symptom categories. Other modalities were specified by 1.67 staff members within the same categories. This presents the clearest pattern.

The final comparison addresses the treatment effects of Fitness Center/Aerobics to decrease the depth of the three depressive symptoms. This is then compared with the overall results of the same subject group.

The 6 subjects assigned to Fitness Center/Aerobics did not show a statistically significant treatment effect upon the three symptom categories studied. This group also does not show a statistically significant treatment effect on the whole Beck. Two confounding factors are present. First, 4 of the 6 are clinically 'not depressed', and second, the smaller population provides less power.
On the other hand, the 6 subjects not involved in Fitness Center/Aerobics did show a statistically significant treatment effect with the three categories and the Beck Depression as a whole for this group. The implication of these confounding figures will be discussed in the evaluation section.

The statistical data analysis indicates statistical significance except for the Fitness Center/Aerobics group. At this point, I will present the data from the viewpoint of percentages. The question of practical significance remains. The subject population decreases in depressive severity by 49%. This improves to 63% decrease when we subtract the 4 subjects who did not complete the Beck Depression Inventory within 7 days of admission.

This percentage of decrease of the severity of depression remains consistent across the depth categories of not depressed, mild depression, moderate depression, and severe depression. Initially, two basic observations are relevant. First, these data demonstrate a consistency both of the whole and across intensity/severity categories. Second, the short-term treatment program does have a therapeutic effect upon the severity of depression as measured by the Beck. What aspects of short-term treatment are the causal agent need further study.

These four comparisons do not present a consistent pattern of decrease or percent of decrease of severity or depth of depression. First, the percentage of decrease for those admitted under a Dysthymic diagnosis is 72% while the percentage of decrease for those admitted under Major Depression was 26%. One person within the Dysthymic
category decreased in severity of depression from 40 to 9; that is, from severe depression to not depressed. On the other hand, one subject under Major Depression decreased by 2 points, from 12 to 10 and another stayed the same. Reasons for this will be discussed subsequently. Second, subjects from Floor 2 decreased in severity of depression by 39%, whereas the subjects from Floor 4 decreased by 53%. The difference is likely due to sample size, but the data raise an interesting question about the effect of the milieu. Third, the hypothesis about multifaceted theorized that, based upon the Inter-Rater Scatter, Fitness Center/Aerobics would have a positive effect upon the decrease of severity of the three identified symptom categories. Six subjects assigned to Fitness Center and/or Aerobics decreased in severity of depression on the three items by 43% while they show on the whole scale a decrease in severity of depression by 48%. Those not assigned Fitness Center/Aerobics decreased in severity of depression by 81% on the three symptom categories while they also show on the whole scale a 50% decrease in the severity of depression. Finally, 8 subjects were administered the Beck Depression Inventory within 7 days. They exhibit a decrease in the severity of depression by 63% whereas the 4 subjects administered the Beck Depression Inventory at about 14 days showed a decrease in severity of depression by 22%. Again, the figures raise interesting questions that I will address next.

The data analysis supports the basic hypothesis that the short-term multifaceted inpatient treatment program is efficacious. This is supported with the statistically significant t and supported with
an evaluation of the general data. The data do not support the hypothesis that Fitness Center/Aerobics will have a positive treatment effect upon the three rated categories. For both hypotheses, the data and support are mixed.
CHAPTER IV

DISCUSSION

This study was designed as a descriptive analysis of the treatment effect of a short-term multifaceted inpatient facility upon depression as measured by the Beck Depression Inventory. The Beck Depression Inventory was administered in a Pre-Post Test Design which is common with studies using the Beck Depression Inventory as noted above.

Data analysis using the Correlated t Test indicates a statistically significant treatment effect of subjects involved in a short-term multifaceted program upon the severity of depression. It must be acknowledged that the Pre-Post Design does not carry great power nor does it answer where the variability lies. Since this was not a tightly controlled experiment but a descriptive analysis, it does not answer the question of cause and effect.

The study produces a practical significance. The evidence does support the hypothesis that short-term facilities have a positive treatment effect seen in the decrease of the severity of depression. This significance is supported by the consistency of the percentage of change (see Table 2). This means that this short-term program is fairly effective with consistency across severity categories.

There are certain factors which raise questions about the results pointing to the need for further research to duplicate or dispute the results of this study. First, the population size was small.
at 12. This reduces the power of the design to detect treatment effects. The sample size was smaller than expected for a variety of reasons including many discharges against medical advice who were depressives. Second, there is variability for which the cause has not been determined. Similarly, the design as a descriptive analysis did not factor out the noise. For example, we assume that the subjects all participated in Milieu Therapy, Drug Therapy (basically all), Individual Therapy, and other forms, but this is not factually true. They received different drugs. They had different individual therapists and attended different group therapy sessions. They did not all receive the same amount of therapy or individual worker contact. Therefore, while the patients who participated in this study showed a decrease in severity of depression during participation in this inpatient short-term multifaceted facility, the treatment plans are not well specified to permit causative judgment. Therefore, the need for further research remains.

The short-term focus generates yet another question. If the short-term focus is supported by further research, what is it more effective than—long-term, or outpatient, or partial hospitalization?

The results become more mixed as we compare various groups within the sample size. A basic caution concerning each comparison is not to say too much based upon a small sample. (1) The two diagnostic categories present a statistically significant treatment effect but the percentage of change indicates a greater degree of change for the Dysthymic. Major Depression shows only a 26% change raising questions about accuracy of diagnosis. The late administration of
some initial Beck Depression Inventories may have contaminated the results. (2) The fourth floor demonstrated a statistically significant result and a 53% decrease in the severity of depression. The second floor did not demonstrate a statistical significance and only a 39% decrease in severity of depressive symptoms. The issue here reflects the impact of Milieu Therapy upon the subjects. Is the milieu that different? The small sample size for the second floor makes any judgments tenuous. (3) The Fitness Center/Aerobics modality data compared to those who did not receive this treatment generate some interesting data and very mixed results. This issue will be discussed in detail shortly. (4) The procedural process for the administration of the Beck Depression Inventory, due to unforeseen factors, had a negative impact upon the results. The Beck Depression Inventory was administered to 8 subjects within 7 days while 4 received the Beck Depression Inventory on Day 12, 14, 15, and 17. The results of the 8 subjects are statistically significant supported with a 63% decrease in depressive severity while the results of the 4 subjects, to whom the Beck Depression Inventory was administered late, are not statistically significant and show only a 22% decrease in depressive symptoms. This indicates that the treatment effects had likely begun in two weeks. It also generates an interesting question about drug therapy since drugs, in the right dosage, take 14 to 28 days to take effect. Is a controlled short-term multifaceted inpatient treatment program as effective without drug therapy? Further research is required.

The Inter-Rater Scale was an interesting experiment. I attempted
to show that it is possible to specify treatment modalities with symptom categories. The raters tended to see Psychodrama, Occupational Therapy, and Music Therapy as affecting most symptoms. They say Fitness Center/Aerobics and Anger Therapy are effective for many. Some modalities were rarely seen as effective for any symptom category of depression. The scatter chart does indicate a lack of clarity. Many issues and questions remain. What is the most effective modality for a given specific symptom? What is the most effective combination of specified therapeutic modalities for what specific symptoms in order to be not only the most therapeutic but also the most cost-effective? These issues have important implications for economic questions of cost-effectiveness beside the crucial therapeutic ethical issues.

The multifaceted data are extremely mixed and puzzling. I hypothesized that the Fitness Center and Aerobics modalities would have a treatment effect upon the symptom categories of sleep disturbance, fatigability, and loss of appetite on the Beck Depression Inventory. Six subjects were assigned to Fitness Center and/or Aerobics. Six subjects were not assigned. All subjects were involved in other treatment modalities. The results are basically the reverse of my expectations. The subjects assigned to Fitness Center did not show a statistically significant effect of treatment upon those selected categories. They showed an average decrease of 43% which is slightly lower than the full scale decrease of 48%. However, the 6 subjects not assigned to Fitness Center or Aerobics, show an average decrease in the severity of depression of 81% on
the three selected categories with a statistical significance. These data generate some interesting observations and questions. First, 4 of the 6 subjects assigned to Fitness Center and/or Aerobics were not depressed according to the Beck Depression Inventory, including the assignment of 1 subject just before discharge. Second, some were assigned Movement Therapy as one Occupational Therapy assignment. Third, generally, all subjects are involved in Recreational Therapy. Therefore, the group not receiving Fitness Center or Aerobics modalities may have received similar effects from recreational activities.

One initial concern which generated the specification issue of the study remains. The payee, whether medicaid, insurance carriers, or individuals, do not wish to pay for more than is necessary. The question is not only how many modalities of therapy are most effective, but how effective is the specific modality in the context of the whole. Further, the problem of specification, namely what specific modality is effective treatment for what specific symptom or behavior, remains a crucial issue. To research these questions, the researcher should address the issue of the confounding factors such as different treatment plans, different amounts of time in treatment modalities, and different medications. Thus, the accurate computation of therapy time or the more detailed specification of treatment modalities will begin to provide data to decrease the effect of confounding factors. For example, Occupational Therapy includes different activities and therapies such as therapeutic crafts, creative expressions, and others. Finally, the results of our study were
very mixed and confounded, and they left no clear answer to the question of specification of treatment modalities to specific symptom categories. Unfortunately, it often occurs that, if the mental health professional is unable to provide leadership in his research, the insurance carriers will dictate the policy through their decisions. The challenge is to provide clear research material as the mental health contribution to the struggle for treatment that is cost-effective.

The issue of diagnostic reliability affects this study. Depression is difficult to nosologically classify. Beck et al. (1974) acknowledge reports of low inter-rater reliability. Strober et al. (1981) conducted a reliability study of psychiatric diagnosis of adolescents proving it is possible to classify the majority of teenage clients using descriptive categories. Lewinsohn (1974) observes that many patients who are referred for treatment of depression often manifest a rather mixed symptomatology including anxiety, turmoil, and confusion. This issue of diagnosis arises because 4 of the 12 subjects admitted under Dysthymic or Major Depression diagnoses were clinically not depressed. This confounded the study results. It also illustrates the unique character of the Beck Depressionion Scale with its concept of severity or depth, using symptom categories, as measurement of depression.

The absence of a non-treatment control group is a weakness. There are no data generated about what happens under no treatment in comparison to the treatment group. Studies using a control group of minimal contact or delayed treatment generally report that these
subjects show less change or treatment effect (Barrera, 1974; Brown, 1984; Weissman, 1981). These studies provide information indicating general direction of no-control elements of other studies. Finally, the issue of spontaneous remission is always present and not always easy to detect. It can occur in depression and will confound the data.

Another confounding factor may be termed the "halo" effect. The subject receives the post-administration of the Beck Depression Inventory between the time he is informed that he will be discharged and his actual leaving. Clinical behavioral observation generally displays a positive mood response although some may exhibit anxiety. The question is this: Does the knowledge of going home decrease the severity of depression? The multiple administration of the Beck Depression Inventory would provide data which will indicate some answers to the present issue.

The question of causative or causal agents remains unanswered. While positive change did occur, while we know that it occurred in a short-term facility, while it may be argued with some support that the short-term is part causal, the results are mixed with confounding factors. Therefore, further research is required.

Finally, the issue of generalization is crucial. To whom am I able to apply the results? The data suggest that the conclusions are applicable to inpatient subjects who, admitted under a Dysthymic or Major Depression and referred by their psychiatrist to this study, participate in the short-term multifaceted hospital program.

The results were mixed with many confounding variables.
Therefore, numerous issues need further research. (1) An experimental design to test the present thesis to either conform or refute the data of this study is needed. For example, a multiple baseline with repeated measures would provide greater power. This design should incorporate severity not psychiatric diagnosis as population definition. Working with one physician would limit delays in testing. (2) Longitudinal studies or elements of a study would provide information about the patient's ability to generalize his growth within the environment of his community. This is especially important because depression may have multiple episodes (Beck, 1967). For example, some participants of this study have been readmitted. (3) Research is needed to determine the response pattern of the depressed person. The multiple administration would provide information about when does the change begin; when does it peak; and when are there plateaus? This would provide additional evidence about treatment effectiveness. (4) Studies are needed to determine the most cost-effective therapeutic treatment plans. The specification concept is a crucial element of the cost factor as is the multiplication of effect in a multifaceted program.

In summary, this research project was designed to demonstrate the treatment effect of a short-term multifaceted inpatient treatment facility as measured by the Beck Depression Inventory. The generated data demonstrate that there is statistically significant and positive treatment effects of a short-term inpatient facility upon depression. The question is whether the short-term element has a causal connection. The second proposition hypothesized that
Fitness Center/Aerobics would have a positive treatment effect upon
the symptom categories of sleep disturbance, fatigability, and loss
of appetite of the Beck Depression Scale. The subjects assigned to
these modalities did not show a statistically significant effect.
While the results are mixed, the existing data and generated questions
provide opportunities for further research.
## APPENDIX A

### INTER-RATER RELIABILITY SCATTER PATTERN

<table>
<thead>
<tr>
<th>Beck Depression Inventory Symptom Categories</th>
<th>Multifaceted Therapy Modalities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mood</td>
<td></td>
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<tr>
<td>Pessimism</td>
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<tr>
<td>Sense of Failure</td>
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<tr>
<td>Lack of Satisfaction</td>
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<tr>
<td>Guilt</td>
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<tr>
<td>Punishment</td>
<td></td>
</tr>
<tr>
<td>Self-Accusatory</td>
<td></td>
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<tr>
<td>Suicidal</td>
<td></td>
</tr>
<tr>
<td>Crying</td>
<td></td>
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<tr>
<td>Irritability</td>
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<tr>
<td>Social Withdrawal</td>
<td></td>
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<tr>
<td>Indecisiveness</td>
<td></td>
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<tr>
<td>Distortion of Body</td>
<td></td>
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<tr>
<td>Work Inhibition</td>
<td></td>
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<tr>
<td>Sleep Disturbance</td>
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<tr>
<td>Fatigability</td>
<td></td>
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<tr>
<td>Loss of Appetite</td>
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<tr>
<td>Weight Loss</td>
<td></td>
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<tr>
<td>Somatic Preoccupation</td>
<td></td>
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<tr>
<td>Loss of Libido</td>
<td></td>
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</tbody>
</table>

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MEMO

TO: Designated Head of Research Committee
FROM: Sherwin Van Klompenberg
RE: Beck Depression Research Project

This research project is designed to study the treatment effects of a short-term multifaceted treatment facility upon depression. I have formulated the question in this way: A descriptive analysis of the treatment effects of a short-term multifaceted facility upon depression as measured by the Beck Depression Inventory.

Background Issues

This hospital is a short-term multifaceted program. This type of program is built upon certain theories of treatment effectiveness in alleviating psychological/emotional dysfunctioning in patients. The basic theory hypothesizes that short-term, when necessary multiple, hospitalization is the most efficacious and cost-effective program for treatment. This project was developed because I began to reflect upon certain questions: Is the short-term program the preferred mode of treatment for all major diagnosis? More specifically, is a short-term program effective for depression? Does the severity of the depressive symptoms influence the effectiveness of the short-term treatment program? Therefore, I decided to design a project to address these issues.
Second, this hospital is also a multifaceted program where patients are assigned to different modalities as their treatment programs. Does a given modality truly effect change? For example, does the Fitness Center or Aerobics help alleviate depression? Is it possible to measure the amount of change a given modality effects? The second aspect of this project attempts to address this question.

It is also important to delimit this project. First, this project is purposefully designed as a descriptive analysis not an experiment. This design decision was based upon the commitment not to change or alter the normal treatment process or treatment plans. Rather it is simply designed to analyze what is being done. Second, this project does not address treatment effects of a short-term program upon the different types of depression such as chronic versus situational.

Finally, I chose to define the population for this project as the patients admitted to J-ll and I-IV with a primary or secondary diagnosis of depression and Dysthymic Disorder. This may provide the additional opportunity to analyze the difference in the treatment effects upon major depression or depression related to Dysthymic Disorder.

Research Design

This research project is a descriptive analysis of the treatment effects of a short-term multifaceted program upon depression as measured by the Beck Depression Inventory. This analysis will involve a statistical analysis using the treatment plans and the
data of the Beck Depression Inventory. The project involves these procedures:

1. The patient will have the project briefly explained and will be asked to sign an "Informed Consent" Form.

2. The Pre-Post Test administration of the Beck Depression Inventory to patients admitted with a diagnosis of Depression or Dysthymic Disorder. It is important to note that here is the basic change from normal procedure. The Beck is usually administered to depressed patients. Therefore, the second administration at discharge is the basic change.

3. An Inter-Rater Reliability analysis of which Beck Depression categories correspond to which treatment modalities. This rating is done by staff.

4. A descriptive analysis of the treatment plans and the Beck Depression Inventory data.

Concluding Observations

This project will hopefully provide information which will assist staff and administration in treatment program design and evaluation especially in the area of depression. This project also attempts to demonstrate how to evaluate the treatment effect of individual modalities in the treatment of depression. This specifically addresses the issue of cost justification.
MEMO

TO: Selected Staff
FROM: Sherwin Van Klompenberg
RE: Inter-Rater Reliability Questionnaire

The Master of Clinical Psychology program requires a thesis research project. Presently, I am attempting to formulate a study around the Beck Depression Inventory to measure the treatment effects of a short-term multifaceted facility.

I am also attempting to design the project to assess the treatment effects of individual modalities. Thus, I wish to establish through Inter-Rater Reliability which specific modalities are expected to effect a change in which individual questions on the Beck Depression Inventory.

Therefore, I would appreciate your help with this task:

To take the attached Beck Depression Inventory and place in the left margin the corresponding letter of the individual treatment modalities which you judge ought to effect a change in that specific item. Place a letter(s) only by the items (set of questions) which you judge will be affected by that specific modality.

A. High O.T.  G. Leisure Counseling
B. Low O.T.   H. Parenting Skills
C. High M.T.  I. Assertiveness Training
D. Low M.T.   J. Psychodrama
E. Fitness Center K. Anger Therapy
F. Aerobics

I appreciate your assistance. If you have any questions, please contact me. If possible, I would like these questionnaires returned by Tuesday evening, August 21, 1984. You may place them in my box in the Psychology office.

Thank you very much for your time and willingness to participate.

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APPENDIX D

INFORMED CONSENT FORM
FOR
RESEARCH PROJECT ON BDI & TREATMENT EFFECT

I, ____________________________ hereby agree to participate in the research project. I understand that it will not change or affect my treatment. I reserve the right to withdraw at any time. I understand that all rules of confidentiality do apply.

Date ___________ Signed: ____________________________
PLEASE NOTE:

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These consist of pages:

P. 64-66 Beck Depression Inventory.

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