Correlates of Survival for the Community Based Mental Health Patient

Joanne M. Walker

A thesis submitted in partial fulfillment
of the requirements for the degree of
MASTER OF SCIENCE
Saint Mary's University
Halifax, Nova Scotia

© Copyright

Approved: _____
G. Pretty
Thesis Advisor

Approved: _____
V. Catano
Thesis Committee Member

Approved: _____
V. Parliament
Thesis Committee Member

Date: 21/4/92

National Library of Canada
Bibliothèque nationale du Canada

Canadian Theses Service
Service des thèses canadiennes

Ottawa, Canada
K1A 0N4

The author has granted an irrevocable non-exclusive licence allowing the National Library of Canada to reproduce, loan, distribute or sell copies of his/her thesis by any means and in any form or format, making this thesis available to interested persons.

L'auteur a accordé une licence irrévocable et non exclusive permettant à la Bibliothèque nationale du Canada de reproduire, prêter, distribuer ou vendre des copies de sa thèse de quelque manière et sous quelque forme que ce soit pour mettre des exemplaires de cette thèse à la disposition des personnes intéressées.

The author retains ownership of the copyright in his/her thesis. Neither the thesis nor substantial extracts from it may be printed or otherwise reproduced without his/her permission.

L'auteur conserve la propriété du droit d'auteur qui protège sa thèse. Ni la thèse ni des extraits substantiels de celle-ci ne doivent être imprimés ou autrement reproduits sans son autorisation.

ISBN 0-315-74452-9

Canada

ACKNOWLEDGEMENTS

I would like to express my deepest gratitude and appreciation to my thesis advisor, Dr. Grace Pretty, for her unfailing encouragement, relentless support and guidance. I would also like to thank the members of my thesis committee, Dr. Vic Parliament and Dr. Vic Catano for their participation and comments.

Special thanks to my husband Hassan and my parents Mary and Sam for their love, patience and understanding. Without them, I could not realize the fulfillment of this project.

Finally, I wish to thank Michael Walker and Diana Ewert for their assistance and help.

Table of Contents

ACKNOWLEDGEMENTS i

LIST OF TABLES AND FIGURES iv

ABSTRACT 1

INTRODUCTION 2

VARIABLES DEFINING COMMUNITY SURVIVAL 4

Employment 5

Recidivism 6

Summary 7

PREDICTORS OF RECIDIVISM 8

Social Demographic Factors 8

Previous Hospitalization 10

Diagnosis 12

Summary 13

Perception of Psycho-social Environment 15

Symptomology 21

Summary 23

SATISFACTION AS AN INDEX OF SURVIVAL 25

Measurements of Satisfaction 27

Predictors of Satisfaction 29

Summary 30

METHODOLOGICAL ISSUES 31

PURPOSE 33

METHOD 36

Participants 36

Measures 37

Procedure 40
Data Analysis 42
RESULTS 44
Descriptive Analysis of the Outcome Variables 44
Descriptive Analysis of the Predictor Variables 45
Relating Psycho-social Climate to Community Survival 46
Relating Psychological Well-being to Community Survival 47
Relating Physical Well-being to Community Survival 49
Predicting Recidivism 49
Predicting Satisfaction 51
Relationships Among Outcome Variables 52
Relationships Among Predictor Variables 53
DISCUSSION 56
Methodological Issues 59
Measurements of Outcome 62
Measurements of Predictor Variables 66
Conclusion 67
REFERENCES 71
APPENDIXES 78
Appendix A 79
Appendix B 80
Appendix C 82
Appendix D 83
Appendix E 84
Appendix F 85

List of Tables

Table 1. Spearman Rho Correlation Matrix for Recidivism Rates, Level of Satisfaction, Psychological Well-Being, Physical Well-Being, and Perception of Psycho-Social Environment.....48

Table 2. Regression Results Showing Relationship of Predictor Variables to Recidivism.....51

Table 3. Regression Results Showing Relationship of Predictor Variables to Satisfaction.....53

Table 4. Spearman Rho Correlation Matrix for the Dimensions and Subscales of the COPES.....55

Table A-1. Length of Time Participants Were at Residence.....79

Table D-1. Measures of Central Tendency and Variability for Outcome and Predictor Variables.....83

Table E-1. Frequency of Scores of Psychological and Physical Well-Being.....84

Table F-1. Average Value of Satisfaction for Psychological Well-Being Scores.....85

ABSTRACT

Correlates of Survival for the

Community Based Mental Health Patient

J.M. Walker

April 2, 1992

The purpose of the present study was to explore community survival of community based mental health patients in terms of social and psychological factors based on the theoretical framework of social ecology. Two measures of community adjustment were used: recidivism and satisfaction. The research question was the extent to which these outcome measures could be predicted clients' perceptions of their psycho-social environment (as measured by the Community Oriented Programs Environment Scale), and their psychological and physical well-being (as measured by the Level of Care Survey). Sixty-two residents in nine Residential Care Facilities were interviewed. Results indicated that recidivism could be partially predicted from psychological well-being and participants' perception of their psycho-social environment. Autonomy, support, order and organization, and involvement subscales were partially predictive of satisfaction. No conclusions were reached about the use of satisfaction as an outcome measure. Methodological issues and recommendations for further research are discussed.

INTRODUCTION

There has been a trend over the last three decades of shifting the locus of treatment for the chronically mentally ill from hospitals to community based programmes. This has generated considerable research on the correlates of survival [e.g. tenure in the community] for the discharged hospital patient in the community (Serban and Gidynski, 1974 ; Willer and Biggen ,1976 ; Miller and Willer, 1976 ; Ellison, Blum and Barsky, 1986). However, little progress has been made in identifying those factors which influence community survival (Anthony, Cohen and Vitalo, 1978 ; Pablo, Kadlec and Arboleda-Florez, 1986 ; Avison and Speechley ,1987). An issue that is prevalent throughout the literature is the questionable validity of methodologies which assess survival on the basis of hospital readmissions, community tenure, and employment after discharge. Anthony et al. (1978) and later Avison and Speechley (1987) advocated the use of supplementary indexes to assess other dimensions of survival, such as the amount of stress experienced by the mentally ill.

The poor survival rate of discharged psychiatric patients in community settings is discouraging. Anthony, Buell, Sharratt and Althoff (1972), in a review of studies on post-discharge functioning, found that the percentage of rehospitalized patients varied according to the amount of time between release and follow-up. Studies of patients 12 months after discharge showed that 40 to 50 percent had been rehospitalized. Anthony et al. suggested that these figures could be used as a base rate. Fischer, Goering, Lancee and Wasylenki (1981) found similar results. They looked at readmission rates for discharged patients in Metropolitan Toronto. Their results indicated a rate of recidivism of 30 to 40 percent at 6 months, 25 to 55 percent at 1 year and 65 to 75 percent at 3 to 5

years. The study did not focus solely on chronic patients, but included all readmissions.

Between 1960 and 1976 the number of patients treated in psychiatric units in general hospitals in Canada increased from 9,770 to 63,760. As the percentage of patients receiving treatment in psychiatric facilities increased, the number of admissions also rose to the point that 50 to 60 percent of all mental hospital admissions were readmissions (Pablo et al., 1986).

These studies indicate extraordinary readmission rates. This phenomenon has far reaching implications for health care costs and community based services. These findings are important for planning and policy making in the management of mental health services. Geller (1986) pointed out that hospital administrators and mental health practitioners have viewed rehospitalization as a failure in the health system. Casper and Pastva (1990) maintained that hospital administrators are concerned with the burden of extra cost, resource allocation and census management that repeat admissions create. Over the past 2 decades interest has shifted from readmission rates to the future of the health care system. However, if one wishes to reduce readmission rates and maintain ex-patients in the community, it is necessary to know what influences community survival.

Many studies have attempted to define variables which influence survival in the community. The variables identified from past studies influence the evaluation methodology of current programs. However, these same studies have been plagued with problems of inappropriate outcome measures and

predictors. Hence the adequacy of current evaluation procedures continues to be questioned on the basis of their prototype. Wan and Ozcan (1991) argued that past psychiatric service research on the performance of mental health centers did not develop universally accepted evaluation criteria.

The purpose of this study was to further the assessment of those factors that influence recidivism and survival within the community including psycho-social environmental factors and satisfaction indexes. By including the assessment of these variables, evaluation of mental health care could in turn become more effective.

Variables Defining Community Survival

In the past, employment (Bachrach, 1976 ; Anthony, Cohen and Vitalo, 1978 ; Mosher and Keith, 1979 ; Pryer and Distefano,1986) and recidivism (Bachrach, 1976 ; Anthony et al.,1978 ; Mosher et al.,1979 ; Geller,1986 ; Drake and Wallach,1988) have been the most commonly used variables to assess community survival. Satisfaction (Willer and Miller,1978 ; Pryer, Distefano and Dinning,1982) has also been used to evaluate survival. Other measures such as quality of life (Dellario and Anthony,1981) have been used, but not as frequently. Fischer et al. (1981) maintained these outcome measures were insufficient descriptions of psychiatric state and psycho-social rehabilitation and that more appropriate and varied outcome measures should have been utilized. Fischer et al. also maintained that there was a lack of consistent results and methodology in the literature. A closer analysis of these outcome measures illuminates these methodological issues which may explain the inconsistent results.

Employment

Anthony et al. (1972) examined post-hospitalization studies which used employment as the index of functioning. Base rates indicated that full-time employment decreased with time. That is, at a 6 month follow-up, 30 to 50 percent of the patients had full-time employment; at 12 months 20 to 30 percent were employed full-time and after 3 to 5 years, the percentage employed was only 25.

Fischer et al. (1981) looked at employment rates for patients discharged from psychiatric hospitals in Metropolitan Toronto. After a 6 month follow-up, only 38 percent were employed full-time. This rate was in accordance with that reported by Anthony et al. (1972).

Bachrach (1976) criticized the use of employment status as an index of post-discharge functioning. She argued that the term "employment status" was difficult to define. Not all released patients were able to work and external factors, such as economic conditions influenced the availability of the job market. Bachrach suggested that if this index was to be used at all, a comparison should have been made between the patients' employment functioning before and after hospitalization. Similarly, Olsh .isky (1968) argued that having a job did not necessitate wellness. Pryer and Distefano (1986) maintained that outcome data on post-hospital employment was not abundant and appeared to be inaccurate due to economic factors. Since employment status appears to be influenced by various factors external to the patients themselves, it was not considered as a measure of community survival for the present study.

Recidivism

Recidivism (repeated hospitalizations for mental health reasons) has been the most prevalent measure of post-discharge functioning. The index of recidivism has taken predominantly two forms. The first measure is readmission to hospital during a specified follow-up period. Examples of studies that used this measure of recidivism include Caton (1982) and Tessler and Manderscheid (1982). Caton studied chronic schizophrenic patients in terms of the length of inpatient stay in relation to subsequent hospitalization and clinical and social functioning over a 2 year period. Results indicated that length of inpatient stay did not result in a higher rehospitalization rate.

Tessler and Manderscheid studied community adjustment of chronically mentally ill patients in a community support program. Four measures of community adjustment were used including a dichotomous measure of psychiatric hospitalizations within the previous 12 months. Results indicated that poor community adjustment could be predicted from poor basic living skills, behavior and traits that offend others, and from somatic problems.

The second measure of recidivism is the proportion of time during the follow-up period that the patient spent in the community after discharge. Examples of studies that used this measure of recidivism include Strauss and Carpenter (1974), Strauss and Carpenter (1977), and Growe, Klass, Rudolf and Strizich (1977). Strauss and Carpenter (1974) examined the predictors of outcome for schizophrenics admitted to psychiatric wards in two general hospitals and one state hospital. The outcome measure consisted of the amount of time spent out

of hospital during the follow-up period of 2 years. Results indicated that outcome was not a single process but was comprised of several processes. Strauss and Carpenter (1977) repeated the study. The 1974 outcome measure was reused but with a 5 year follow-up. Results were similar as there was a high correlation between the 2-year outcome variables and their 5-year counterparts. Strauss et al. concluded that time in hospital only partially reflected total outcome functioning of an individual.

Growe, Klass, Rudolf and Strizich (1977) attempted to predict community tenure of discharged state hospital patients. Outcome was measured by the number of weeks of non-hospitalization after discharge over a 10 month period. Amount of time out of hospital was computed from discharge date to readmission date. If a patient had multiple admissions and discharges during the follow-up period, only the first readmission was considered. The authors suggested that community tenure was only one criterion of outcome.

Summary

The problems of using recidivism as a measure of outcome have largely been a result of confounding variables. This index may vary with factors such as length of hospital stay, number of previous admissions, social class, and physical health (Bachrach, 1976). Therefore, these factors must be controlled in order to get meaningful information about recidivism. Studies which have used recidivism as an outcome measure have used different predictors, varying methodologies, and included a mixture of diagnostic categories. These problems were investigated further in the present study to develop a more valid and reliable methodology.

Predictors of Recidivism

Social Demographic Factors

Several studies have examined social demographic factors as predictors of recidivism. The results of these studies indicated that social demographic factors did not significantly predict recidivism.

Serban and Gidynski (1974) examined social-demographic factors of chronic and acute schizophrenic patients in order to predict rehospitalization. The factors studied were education, employment, occupation and marital status. Analyses of the relationship between each of the predictor variables and readmission status indicated that marital status and occupation were significantly related to readmission for the chronic group only. The authors postulated that the chronic patients had impaired social skills because of the length of their illness and amount of hospitalization. Serban et al. suggested that the predictive value of social-demographic factors could therefore only be determined by longitudinal studies of acute patients.

Franklin, Kittredge and Thrasher (1975) studied fifty-two variables of discharged psychiatric patients over a period of 6 to 13 months in an effort to predict rehospitalization. Variables included age, gender, education, race, marital status at first hospital stay, place of residence and current treatment. Results indicated that readmission was the result of an interaction between various personal and environmental factors such as economic dependency and poor self-image.

Fontana and Dowds (1975) administered a questionnaire regarding information on social stability, education, chronicity, and subjective distress to 52 psychiatric patients, their caregivers and nursing staff. High chronicity and high symptomology were the only variables identified as significant predictors of rehospitalization. Fontana and Dowds profiled an individual likely to be readmitted to hospital as having a combination of high chronicity and high subjective distress.

Pablo, Kadlec and Arboleda-Florez (1986) examined records of 150 patients discharged from a general hospital in Calgary. Select demographic, clinical characteristics and reason for admission in relation to rehospitalization patterns were examined. Age, gender, marital status, and diagnosis were found to have no significant effect on hospitalization patterns.

Wan and Ozcan (1991) examined 144 patients in psychiatric state hospitals. Social-demographic factors were studied to predict first admissions and readmissions to hospital. Results showed that some social-demographic factors (race and age) were significant predictors of first time admission. Social demographic factors were insignificant predictors however of readmission to hospital.

There is a general consensus in the literature that social demographic factors are not significant predictors of recidivism. This appears to be a reasonable conclusion as the studies reviewed varied considerably in terms of diagnostic composition and length of follow-up period, yet produced consistent results. Statistical analyses between studies varied as well however, the use of multiple

linear regression to analyze the data was prevalent. This allowed for evidence of the unique variance contributed by each demographic factor rather than the variance common to many factors. Social-demographic factors will therefore not be considered in the present study.

Previous Hospitalization

Several studies have examined the relationship between recidivism and previous hospitalization. The results are conflicting. Buell and Anthony (1973) examined 78 psychiatric patients discharged from a state hospital. Analyses for recidivism on demographic characteristics indicated that the major predictor of recidivism was number of previous hospitalizations. The remaining characteristics showed little or no relationship to recidivism.

DiScipio and Sommer (1973) compared one group of recidivists who had returned to hospital within 30 days after discharge with a control group of discharged patients who had not returned within that time frame. Results indicated that readmitted patients differed significantly from the control group by only a higher incidence of previous hospitalizations and a significantly higher incidence of previous 30 day admissions.

Miller and Willer (1976) utilized a Self-Assessment Guide on 108 patients discharged from a psychiatric hospital 3 months after discharge. Number of previous hospitalizations was a significant, but not the most potent, predictor of rehospitalization. The authors suggested that a combination of variables is necessary to make accurate predictions of recidivism.

Studies with results that did not find a correlation between past hospitalization and recidivism include Willer and Biggen (1976) and Byers, Cohen and Harshbarger (1978). Willer and Biggen (1976) examined the relationship between community adjustment and recidivism by using the Self-Adjustment Guide. Recidivism was measured by rehospitalization within 6 months after discharge. Main effects and interaction F values for all scores on the questionnaire for previous hospitalization experience were not significant.

Byers, Cohen and Harshbarger (1978) examined 129 patients discharged or released on a trial visit form a state hospital between 1971 and 1973. The outcome variables were: readmission to a mental hospital within 1 year after discharge, total number of days spent in the community within 1 year following discharge and number of days to first readmission. Results indicated that the predictor variable of number of previous hospitalizations was not strongly related to recidivism. The authors suggested that recidivism is a complex phenomenon which could only be explained by examining an interaction of many factors. They did not specify which factors.

Studies using previous hospitalizations as a predictor of recidivism were prevalent in the 1970's. The conflicting results may be attributable to variations in the index of rehospitalization, differing follow-up periods and the inclusion of heterogeneous groups. The studies suggested that recidivism is not a simple process but rather a complex interaction between several factors. Although previous hospitalization history has been shown in some studies to be a significant predictor of recidivism, it does not advance our understanding of the process of community adaptation. That is, it does not explain the clinical or

social conditions predisposing a particular patient to become a chronic recidivist. Previous hospitalization therefore will not be used as a predictor variable in the present study.

Diagnosis

Diagnosis has been hypothesized to be a predictor of recidivism. Studies have examined if patient groups selected by different diagnostic criteria have different predictor-outcome relationships. Results indicated that diagnosis was not a significant predictor of recidivism.

Avison and Speechley (1987) pointed out that few studies have reported whether diagnosis was correlated with readmission rates. Buell and Anthony (1973) stated that schizophrenics were more likely to be readmitted to hospital than non-schizophrenics. However, they did not find this relationship to be statistically significant in predicting recidivism.

Fischer et al. (1981) assessed 505 psychiatric patients using follow-up periods of 1, 3 and 6 months after discharge. Results indicated that there was no significant difference in readmission rates for diagnostic subgroups. Pablo, Kadlec and Arboleda-Florez (1986) also found that diagnosis was not significantly related to recidivism.

Geller (1986) examined 12 psychiatric patients with a total of 276 admissions. Geller found a significant difference in the reasons for readmission between schizophrenic and personality disorder groups. The author concluded however

that there was no difference in the rate of readmission between the two diagnostic subgroups. Holmes-Eber and Riger (1990) examined the relationship between social network composition, hospitalization and mental illness. Patients were given a DSM-III diagnosis and a measure was used to evaluate patients' overall level of psychological functioning. Results indicated that neither the severity of mental illness nor diagnosis had any significant relationship to number of hospital admissions.

Diagnosis has not been shown to significantly predict recidivism either in diagnostic subgroups or between diagnoses. It may be that diagnosis as a predictor variable is too general a term. For example, patients with a particular diagnosis may have impaired function in one sphere (ie. symptoms) but perform well in another (ie. work). Thus diagnosis as a predictor variable may have underlying composite factors that affect outcome. Also at issue is the lack of reliability of diagnosis between clinicians. Diagnosis will not be considered in the present study both because of its lack of predictive significance and the nature of its generality.

Summary

A literature search indicates that the predictors that have been reviewed so far have been the most prevalent variables examined in recidivism studies. It appears that there are intervening factors that limit the overall comparability as well as the general validity of studies using these variables. More specifically, not all patients are consistently followed-up. Discharged patients may be difficult to trace or compliance may be lowered for a variety of social and personal

reasons. Also, the follow-up periods across studies have been highly variable between release and follow-up dates. With rapid changes in therapeutic procedures, the increased use of psychoactive drugs and related changes in length of hospital stay, comparability of discharged patients separated by only a few years may be affected.

In general these predictors fail to advance our understanding of the process of adjustment, rather they simply identify broad categories of patients who are at risk of subsequent hospitalization. Little systematic information is available from these predictors about the clinical and social factors that predispose a patient to become a chronic recidivist. Drake and Wallach (1988) argued that each patient had a unique background of values and beliefs with which they viewed their environment. Various factors and supports were therefore perceived and weighted individually to arrive at a given meaning for each patient. When variables are treated as constants, comparability amongst studies is lowered as recidivism is a complex interaction of institutional, community and individual factors. Miller and Willer (1976) concluded that concentrating on diagnostic determinants of rehospitalization resulted in too narrow a focus. They advocated that social processes were important determinants of recidivism. Anthony and Buell (1974) similarly argued that investigating the functioning of a patient after release was a more potent approach in predicting and understanding recidivism than attempting to predict outcome from demographic variables.

A more comprehensive explanation of psychiatric readmission may benefit therefore from an approach that includes social and psychological factors. The present study will consider this approach.

Perception of Psycho-social Environment

Although there may be many variables that have an impact upon a chronic psychiatric patient's community survival, situational and environmental factors have emerged as having a greater importance than previously thought. The study of social ecology examines the impact of physical and social environments on the behavior of individuals. The theoretical basis is a conceptualization of the need of long term psychiatric patients to be in environments that support personal growth, simultaneously enhancing physical and psychological well-being.

The impact that treatment environments have on patient behavior has been well documented. Stanton and Schwartz (1954) maintained that symptomology may be caused by environment. Caudill (1958) advocated that a patient's behavior must be thought of as an adaptation to the circumstances in which he is placed. Rappaport (1960) theorized that socio-environmental influences were themselves capable of effectively changing individual patterns of social behavior. Finally, Grob (1966) identified that appropriate social milieus were effective in eliminating undesirable patient characteristics.

There is a consensus in the literature that the psycho-social environment in which patients function has a crucial impact on treatment outcome (Moos, 1974b). Moos (1974b) also maintained that behavior is shaped and directed by the environment as subjectively perceived by the people in it.

Social ecology is defined by Moos (1974b) as the multidisciplinary study of the impact of physical and social environments on individuals. It emphasizes the

importance of the social environment and its impact on psychological factors such as self-esteem and personal development. Social ecology also focuses on the identification of dysfunctional reactions such as physical illness and depression and their relation to environmental factors. A basic assumption of social ecology is that human behavior cannot be understood apart from the environmental context in which it occurs. Thus, accurate predictions of outcome cannot be made solely from information about individuals; information about their environments is essential. It is well established that social milieus have important physiological and health related effects (Cobb, French, Kahn and Mann, 1963; Mason, 1968). A systematic conceptualization of environments makes it possible to test more differentiated hypotheses about the effects of specific environmental dimensions on given physiological indices (Kiritz and Moos, 1974).

In an attempt to identify the underlying process that environmental impacts have on behavior, Moos (1984) postulated a conceptual model of social ecology. The model considered the link between stressful life circumstances and adaptation to be affected by an environmental system and a personal system as well as by social network resources, and appraisal and coping resources. The environmental system was composed of physical features, policy and program factors, the aggregate characteristics of individuals in a setting, as well as social climate factors. The personal system included socio-demographic factors of an individual as well as personal resources such as self-esteem, cognitive ability, health status and functional capability. Moos theorized that life stressors and the environmental and personal factors related to such stressors, shaped social network resources and coping responses as well as their effectiveness. This

ultimately has an impact on health and psychological well-being. Moos further postulated that these processes were transactional and that reciprocal feedback occurred at each stage.

Social ecology does not minimize the importance of individual dispositions since some individuals are more prone to express certain behaviors (ie. aggression) than others. In addition, individual dispositions may have their effects in interactions with the environmental conditions. Knowledge of probable behavioral and attitudinal effects of different environment arrangements is a central issue in understanding behavior (Moos, 1974b).

Social systems analysis can be utilized to identify those environmental factors which relate to favorable or unfavorable treatment outcomes and possibly to predict outcome based on the differential impact of milieu setting on specific groups of patients (Moos,1972). Moos and Schwartz (1972), maintained that participants' perception of their psycho-social environment was related to objective indexes of outcome such as community tenure.

Moos (1974b) assessed two hospital-based programs. Each program had 40 patients. The Ward Atmosphere Scale (a social climate scale) was administered at 6, 12 and 18 month intervals. The absolute discrepancy and the extent between an individual's perception of the treatment milieu and the normative perception of his reference group was studied. Outcome was measured by eight questions which measured such things as physical health, tension and depression. Results indicated that patients who viewed their program below the normative perception of their reference group, tended to feel more tense and

depressed. They also complained of having fewer friends, of experiencing worse physical health, a poorer attitude toward self, and poorer overall adjustment. Moos concluded that the type of environment in which an individual functioned may have operated as a moderator in the relationship between perception of environment and treatment outcome. That is, patients who were not well integrated into their milieu had significantly poorer outcomes than those who were well integrated. A patient either fitted into the environment or had a difficult time and thus experienced a poorer treatment outcome.

Knowledge of social systems components allows for the determination of the effects of different environments upon patients. Patient types could subsequently be adequately matched with treatment settings that meet their needs. In this way, maximum fit between patient and treatment environment may be obtained.

Moos (1974b) devised the Community Oriented Programs Scale (COPES) to assess community based psychiatric treatment programs (ie. community care homes). The COPES has been utilized as an index of client satisfaction by providing a detailed analysis of participants' perception of their environment. Moos and Bromet (1978) found that the COPES was independent of the personal characteristics of the raters and reflected the social climate of treatment programs.

Utilizing the COPES, Moos (1974b) maintained that an individual's perception of his environment was more highly and consistently related to outcome than patient background characteristics, staffing or program size. Moos identified

programs that emphasized personal problem solving, the expression of anger, autonomy, independence, practical orientation, order and organization, and staff control had lower rates of recidivism. Conversely, patients who viewed their environment negatively were less satisfied and had poorer functioning.

Other studies have examined the relationship between perception of psycho-social environment and community survival. Patton (1977) implemented an adapted version of the COPES to group home environments. Residents in supportive-participatory environments were less likely to be readmitted to hospital than residents in non-supportive-authoritarian environments. Patton concluded that the type of group home was more predictive of recidivism than background or non-attitudinal independent variables.

Klass, Growe and Strizich (1977) utilized the Ward Atmosphere Scale to study 14 hospital wards for chronic patients. The results indicated that patients treated on highly organized wards may have internalized some of the social structure of the ward and may therefore have stayed in the community longer than if they had not been on an organized ward.

Harris, Bergman and Bachrach (1986) examined 31 chronic psychiatric patients in the District of Columbia over a 1 year period between 1984 and 1985. The patients had all failed in community treatment as measured by rehospitalization between 1980 to 1985. Sixty-one percent had a diagnosis of schizophrenia, 19 percent had an affective disorder and 13 percent had organic brain syndrome. Results indicated that psychiatric patients who were difficult to place in the community and who were dependent on hospital care were

rehospitalized for non-psychiatric reasons (61 percent). Of the patients studied, 29 percent were rehospitalized for psychotic symptoms, 10 percent for substance abuse, 19 percent for medical illness, 32 percent for absence of social supports, and 10 percent for a combination of medical illness and the absence of social supports. The authors suggested that the patients viewed psychiatric hospitals as a psycho-social support network and the rate of recidivism was increased by this perception.

Drake and Wallach (1988) studied patients' living preference in relation to rehospitalization. Patients enrolled in an aftercare program in Massachusetts were evaluated (N=187). All participants were living in the community and had a DSM-III diagnosis of schizophrenia (61 percent), schizoaffective disorder (10 percent), bipolar disorder (20 percent), or personality disorder (9 percent). The mean age was 40.1 years. Only 9 percent of the participants were married, 60 percent were single and 28 percent were separated, divorced or widowed. Past hospitalization history was measured as total time spent in hospital and ranged from a few months to 30 years. Clinicians were asked to rate the participants' attitudes toward hospital as a place to live compared to current housing in the community. The participants were assigned to two categories: "prefers to live in hospital" (24 percent) and "prefers to live in the community" (76 percent). The participants were followed for 12 months. Forty-three percent were rehospitalized at least once during this period. There was no significant relation between diagnosis and readmission. Living preference was however a strong predictor of rehospitalization for the full sample and the schizophrenic patients. There was not a significant relationship between living preference and rehospitalization for patients with schizoaffective disorder or bipolar disorder.

Living preference was unrelated to rehospitalization for the patients with personality disorders. Drake and Wallach suggested that the patients' attitudes toward their environments appeared to influence subsequent hospitalizations.

Perception of psycho-social environment has been relatively ignored in previous studies. It would appear however, that there is a general consensus in the studies that did address this variable that patients' perception of their psych-social environment is predictive of recidivism. The present study will explore this relationship further by using the COPES to measure individuals' perception of their environment. The a-theoretical nature of the COPES and conceptual inadequacies of averaging individual scores are sources of concern (Emerson and Pretty, 1985). Bachrach (1976) however advocated for the integration of results from statistical studies with those of qualitative reports on the conditions of released patients in order to assess their adaptability to community life. Thus the descriptive analyses that can be provided by the COPES may be valuable in determining outcome.

Symptomology

In general, the methodologies of recidivism studies fail to discriminate between preventive and ameliorative re-treatment. This has confounded the follow-up picture. While recidivism rates are frequently used as a measure of "improvement maintained" over time, those who are re-treated for maintenance purposes are commonly not distinguished from those re-treated because improvement was not maintained (Jacobs, Aronson and Nystrom, 1983). Thus, patients grouped into diagnostic categories may vary at any point in time in

terms of their physical and psychological symptoms. (The implication of diagnosis being too general a term has previously been discussed). Increases in rates of recidivism may reflect the number of patients maintaining their improvement as well as those for whom improvement was not maintained. This study will make this distinction by examining physical and psychological symptoms as predictors of recidivism. Studies are sparse concerning symptomology as a predictor of recidivism (rather, the focus has been on symptomology as an outcome variable resulting from social factors). In studies that have addressed symptomology it has been a significant predictor of recidivism.

In a previously mentioned study, Fontana and Dowds (1975) profiled an individual likely to be readmitted to hospital as having a combination of high chronicity and high symptomology with low subjective distress. Bachrach (1976) has mentioned physical functioning as a predictor of recidivism. Bachrach conducted a literature search of follow-up studies of patients released from state mental hospitals to the community. She concluded that recidivism did vary with such factors as physical health and symptomology.

Fischer et al. (1981) discussed symptomology as a strong predictor of readmission. They examined 744 discharged patients from 12 ..ospitals in Ontario. There was no exclusion criterion for subjects. There was a follow-up period of 6 months which consisted of observer ratings and self-report questionnaires. Included in this was a General Health Questionnaire which consisted of 28 questions and 4 subscales that examined somatic symptoms, anxiety and insomnia, social dysfunction, and severe depression. The authors concluded that symptomology was a strong predictor of readmission to hospital.

Wasylenki, Goering, Lancee, Fischer and Freeman (1985) studied 747 discharged psychiatric patients in Toronto. Six months after discharge, patients were interviewed about their symptomology and social functioning. This was repeated 2 years after discharge. Results indicated that symptomology was closely related to the rate of recidivism. The authors also concluded that symptomology such as hostility, suspiciousness and thought disorder seriously limited the abilities of patients to use aftercare services.

Summary

It appears from the literature that recidivism is a complex phenomenon. Few studies concurred on the predictors of recidivism, however there was a general agreement that social demographic factors and diagnosis were not significant predictors, and the significance of previous hospitalization was questionable. It has been hypothesized that recidivism is a result of an interaction between various personal and environmental factors including interpersonal relationships and supportive networks. It follows that any attempt to develop a more comprehensive explanation of recidivism must address clinical and social factors. The perception of psycho-social environment and symptomology have been theorized to be intricately related to behavior and subsequent survival in the community. There is also empirical evidence that shows these variables are predictive of recidivism. They will therefore be examined in the present study.

Using recidivism as an outcome measure has been criticized and advocated. Franklin, Kittredge and Thrasher (1975) pointed out that patients may have been readmitted to hospital because the hospital was a familiar and secure

environment in contrast to the often difficult and deprived life they may have lived in the community. Recidivism may not have necessarily indicated the clients' level of post-discharge functioning. Pablo et al. (1986) criticized the past use of recidivism as an indicator of treatment effectiveness. Studies on readmission did not consistently identify the presenting problem or diagnosis that precipitated readmission. It was therefore impossible to determine probable cause of readmission. Pablo et al. argued that readmission as a treatment failure was only meaningful when the readmission was for the same reason. They advocated controling for diagnostic differences when considering recidivism as an outcome measure. Jacobs, Aronson and Nystrom (1983) pointed out that the use of recidivism as an outcome measure was valid if the assumption was made that a patient was hospitalized only if he was not functioning well. Jacobs et al. defined the rate of recidivism as the average amount of time spent in hospital or the total number of times a person is readmitted. This measure has less interpretive confusion than psychometric or clinical ratings. Thus Jacobs et al. advocated the use of an index of recidivism for measuring outcome, at it is reliable and valid if measuring client functioning as opposed to client dependency on the hospital.

The present study considered recidivism as an outcome measure. Three measures of recidivism were used - inpatient recidivism, outpatient recidivism and total recidivism. Inpatient recidivism was defined as the number of psychiatric admissions to hospital averaged by number of months the participant has been at the present address. Outpatient recidivism was defined as the number of outpatient visits to a psychiatric hospital averaged by the number of months the participant has been at the present residence. A total recidivism

index was obtained by adding inpatient and outpatient recidivism scores. Past criticism of questionable validity of this variable was accounted for by considering the participants' level of functioning (both physical and psychological) in addition to recidivism. No assumption was made that recidivism e[illegible] [illegible]ness.

Satisfaction as an Index of Survival

Anthony, Cohen and Vitalo (1978) advocated for the development of additional indicators of outcome. Few studies have addressed this. Thus little progress has been made toward the development of valid, reliable and sensitive measures. This is not to imply that measures of recidivism are of no value, rather these traditional indicators may be supplemented by indexes which assess other dimensions of community adjustment such as satisfaction.

The evaluation of personal satisfaction as an index of survival has not been commonly used (Emerson and Pretty, 1985). Within the psychiatric literature, satisfaction studies were frequently conducted on inpatient or research populations, less so on discharged patients (Bennett and Feldstein, 1986). Zastowny and Lehman (1988) pointed out that studies of satisfaction in the field of mental health are sparse. However, satisfaction as an outcome measure has been advocated. McPhee, Zusman and Joss (1975) for example suggested client satisfaction is widely overlooked in the evaluation of mental health programs. They stated that most individuals with serious mental health problems had little choice in selection of agencies to care for them. If patients were dissatisfied with service they were not able to seek help elsewhere.

Therefore if an agency was servicing a large number of clients it does not necessarily mean they were satisfying them. McPhee et al. advocated for the use of simple methods of measuring patient satisfaction. Kalman (1983) hypothesized that satisfaction with psychiatric care might enhance compliance with recommended therapeutic procedures. It would follow that this would ultimately enhance community tenure.

Zastowny et al. (1988) maintained that satisfaction may be one of the most important outcome measures of community survival as it may indicate quality of life. Zastowny et al. also pointed out barriers to using satisfaction as an outcome measure. These included : the difficulty of developing an instrument for measuring patient satisfaction, and response and sampling bias.

Satisfaction as an index of survival has also been criticized. In a study by Pryer, Distefano and Dinning (1982), a satisfaction questionnaire was administered to 135 patients in a psychiatric hospital. The questionnaire was a 45 item yes-no format that examined treatment services and environment factors. The number of favorable responses was used as a measure of satisfaction. The criteria for the patient sample were admission to the hospital for acute treatment for a minimum of 7 days and, at the time of testing, a sufficient improvement in symptomology in order to be considered for discharge. The mean rating for satisfaction was found to be consistent with other studies of satisfaction in hospitalized clients. A 6 month follow-up was made of 112 patients who were released within 2 months of completing the initial questionnaire. It was found that there was no significant differences in satisfaction between the 25 subjects who had been rehospitalized. The authors

concluded that client satisfaction with treatment services was not a predictor of survival as defined by outcome measures of rehospitalization and employment status.

Measurements of Satisfaction

Although the use of satisfaction as an outcome indicator has been widely advocated, there is no consensus in the literature on methodology to measure it. Kalman (1983) criticized the methodology of satisfaction studies maintaining they were difficult to interpret and to generalize. Patients tended to be overly positive about treatment, and there was questionable validity and reliability of the instruments that were used in such studies. Dellario and Anthony (1981) pointed out that studies on satisfaction were of questionable value related to survival as they merely indicated the satisfaction with programmes.

Paul (1979) suggested that one method of assessing client satisfaction may be the observation of staff-patient interaction and measuring such things as the nature, frequency and context of verbal and non-verbal interactions. Paul further suggested that more research should be done before any conclusions can be drawn on the influence of community residence on client satisfaction.

Willer and Miller (1978) examined 72 patients in a psychiatric hospital in Toronto. The average stay in hospital was 30 days. Within a few days of admission, patients were interviewed and asked what particular problem led them to hospital, and to describe their work and living situations. Patients were

interviewed as well at discharge and questioned if they thought hospitalization had been helpful. The patients then completed a 24 item Client Satisfaction Scale devised by the Michigan Department of Mental Health in 1973. A 3 month follow-up interview was conducted and the Community Adjustment Scale was administered (Willer and Biggen, 1976). At this point, patients were asked if their problem had been resolved by hospitalization. Incidence of rehospitalization over a 6 month period was noted. Analyses were conducted that used Client Satisfaction Scale results at discharge, general satisfaction at discharge and problem resolution at follow-up as the predictor variables. Results indicated that the Client Satisfaction Scale was related more to work and recidivism. The general questions on satisfaction had little relation to the other outcome measures. The authors suggested a need for a clearer definition of satisfaction.

The most common approach to measuring satisfaction has been the use of one or several global questions (ie. "how satisfied were you") (LaMonica, Oberst, Madea and Wolf, 1986). However, there is controversy over this method. Ware, Davies-Avery and Stewart (1978) criticized it as inadequate to measure a multidimensional phenomenon.

Advocates of the use of global questions to measure satisfaction include Urquhart, Bulow, Sweeney, Shear and Frances (1986). Urquhart et al. administered a patient satisfaction questionnaire to 291 outpatients. The questionnaire had nine items covering various aspects of patient satisfaction with treatment (appearance of clinic, staff courtesy, satisfaction with therapist, received treatment wanted, treatment met needs, would recommend clinic, treatment helped deal with problems, overall satisfaction, treatment helped).

Each of the items was rated on a four point Likert scale. High levels of overall satisfaction were reported. Urquhart et al. concluded that satisfaction appeared to be a unitary dimension and that greater specificity achieved by detailed multi-question satisfaction inventories was not needed. Detailed questioning about different components of satisfaction did not increase the variance of patient satisfaction.

Predictors of Satisfaction

If satisfaction with the residential facility is to be considered as an outcome variable, it is advantageous to know what influences satisfaction within the facility. Past studies have not been able to establish with any consistency the client, treatment, therapist and interacting variables that best predict satisfaction (Ware, 1978 ; Sorenson, Kantor, Margolis and Galano, 1979 ; Lebow, 1982). Few studies have attempted to determine variables that predict satisfaction.

Psycho-social climate as assessed by social climate scales have been shown to influence satisfaction. Lawton, Lipton and Cohen (1976a) examined patient perceptions of their hospital ward using the Ward Atmosphere Scale and compared it to professional ratings of treatment quality while controlling for factors such as number of patients and staff perceptions. Treatment quality was defined as institutionalization, quality of administrative/therapeutic staff and quality of nursing staff. The quality of administrative/therapeutic staff was not related to patient perception of the ward. Poor nursing staff however was associated with low levels of perceived autonomy. Those wards rated as highly institutionalized were perceived by the patients as negative, having little autonomy or structure, low morale and unclear expectations.

Bennett and Feldstein (1986) examined 124 adult patients in a community facility at least once 5 years prior to the study. A 13-item questionnaire was mailed to the patients asking (1) why they had sought help (2) whether they had found the facility helpful (3) what aspects of the facility were most important in determining their attitudes about it and (4) whether they had any other contact with mental health services. Satisfaction was rated on a global attitudinal basis from 1 to 10 based on the patients' responses to two questions (1) was the contact helpful or unhelpful (rated from 1 "very helpful" through 5 "very unhelpful" and (2) was the contact sufficient (rated from 1 "better than sufficient" through 5 "worse than sufficient"). The sum of these two responses gave a satisfaction rating. Diagnosis and salient features of treatment (ie. cost of services) were also examined. Of the 44 percent of the patients who responded to the questionnaire, approximately one third reported satisfaction, one third dissatisfaction and one third were unsure. Satisfaction was most strongly correlated with the patients' perception of their rapport with the service provider. Patient characteristics, diagnosis and system issues did not significantly predict satisfaction. There was a significant positive correlation between symptomology and satisfaction that is not linked to circumstance and dissatisfaction.

Summary

Satisfaction as an outcome variable has been advocated yet the literature does not indicate a consistent method of defining or measuring this variable. There is also a dearth of information of the factors that predict satisfaction. The present study considered satisfaction as an outcome measure. The strength of satisfaction as an index of community survival was measures by correlational

analysis with the predictor variables of perception of psychological well-being, physical well-being and perception of psycho-social environment. Finally, the relationship between satisfaction and recidivism was examined.

Methodological Issues

An extensive literature search indicated that most of the research on the correlates of recidivism was done in the 1970's with little investigation on the topic in the 1980's. Bachrach (1976) reviewed follow-up studies of patients who entered the community after discharge from psychiatric hospitals. She concluded there was a lack of comparability between studies. This was due, in large part, to an absence of global research, that is, studies which examined all discharged patients. Within the literature that had a global approach to subject selection, lack of comparability existed due to variability of follow-up periods, reason for discharge, date of release and criteria that measured post-release functioning.

Jacobs, Aronson and Nystrom (1983) also reviewed follow-up studies of post-hospitalized patients. They pointed out that generalization between studies was difficult if not impossible. Pablo et al. (1986) stated that many studies may have only represented catchment areas and characteristics of one particular service delivery system. They also pointed out that except for a few studies, little was known of post-hospitalized patients in a Canadian context. Thus generalization across studies may not have been valid due to varying populations and services available.

May, Tuma, Yale, Potepan and Dixon (1976) discussed the use of psychometric measures of improvement. These measures were not often valid and reliable as they incorporated both biases of the rater and of the patient. May et al. thus inferred that if such ratings varied in their validity, then comparisons among different clinical measures were questionable.

Willer and Biggen (1976) pointed out that there was a lack of agreement in the literature concerning what constituted community adjustment. Casper et al. (1990) similarly argued that studies on post-hospital functioning varied in their definition of outcome. Therefore complete comparisons of the variables surveyed have not been possible.

In the present study, the problems of external validity were dealt with by using all criteria-meeting residents in all Residential Care Facilities in the Halifax-Dartmouth area, regardless of age, length of time at residence or other demographic factors. The inclusion of all subjects in this manner may allow for the generalization of the findings for all similar environments.

With respects to internal validity, Jacobs, Aronson and Nystrom (1983) pointed out that in follow-up studies the process of randomization was threatened. This was because of the availability of subjects and whether they chose to participate in the follow-up or not, may have introduced a bias.

Avison and Speechley (1987) criticized the methodology of previous studies. They maintained that most studies were plagued by small and heterogeneous samples, imprecise measures of predictor and outcome variables and few attempts to examine statistical interactions.

In the present study, the problems of internal validity were dealt with by using subjects living in a relative homogeneous environment; that is Residential Care Facilities. Therefore all subjects were available for testing and in similar environments. As well, certain biases were excluded by forming criteria for subject inclusion (settlement, length of diagnosis, financial support, past hospitalization). To further strengthen the internal validity, the questionnaires were counterbalanced to control for order effect. Finally, an objective outcome variable was used (recidivism).

Purpose

The present study examined the relationship between recidivism and satisfaction while considering how physical and psychological well-being and clients' perception of residential environment mediate this relationship. The relationship between satisfaction and recidivism was ultimately examined to substantiate the suggestion of Pryer et al. (1982) that client satisfaction as a predictor may be independent of the outcome measure of recidivism.

The hypotheses were as follows:

Factors influencing recidivism:

(A-1). Inpatient, outpatient and total recidivism measures are significantly negatively correlated with participants' perception of their residence psycho-social climate, specifically resident-staff relationships, system/organization, and program dimensions. The rates of recidivism will significantly increase as these scores decrease. The relative weight of each climate component is not

predicted at this time.

(A-2). Inpatient, outpatient and total recidivism measures are significantly negatively correlated with psychological well-being. The rates of recidivism will significantly increase as psychological well-being decreases.

(A-3). Inpatient, outpatient and total recidivism measures are significantly negatively correlated with physical well-being. The rates of recidivism will significantly increase as physical well-being decreases.

(A-4). There is an additive relationship between the measures of psychological well-being, physical well-being and perception of psycho-social climate in the prediction of recidivism. The relative weights of these variables in the regression equation are not predicted.

Factors influencing satisfaction:

(B-1). Satisfaction is significantly positively correlated with participants perception of their psycho-social environment. There will be a significant increase in the level of satisfaction as each climate component increases. The relative importance of each climate component is not predicted.

(B-2). Satisfaction is significantly positively correlated with psychological well-being. There will be a significant increase in the level of satisfaction as psychological well-being increases.

(B-3). Satisfaction is significantly positively correlated with physical well-being. There will be a significant increase in the level of satisfaction as physical well-being increases.

(B-4). There is an additive relationship between the measures of psychological well-being, physical well-being and perception of psycho-social environment in the prediction of satisfaction. The relative weights of these variables in the regression equation is not predicted.

Relationship between criterion measures:

(C-1). There will be a significant negative relationship between the three measures of recidivism and satisfaction. As level of satisfaction increases, the mean number of readmissions to hospital will decrease.

METHOD

Participants

Sixty-two residents from nine Residential Care Facilities voluntarily participated in the study. Of those participants, 50 had the cognitive and communication skills necessary to respond to the questionnaires. This was determined by the vision, hearing, speech and comprehension section of the Level of Care Survey. Residential Care Facilities (as defined by the Report of the Task Force on Homes for Special Care to the Minister of Social Services, June, 1984) include any building or place where supervisory care or limited personal care without professional nursing supervision is provided to 4 or more persons who are ambulatory or semi-ambulatory. the population of Residential Care Facility inhabitants was defined by the following:

(a). Had settlement in Halifax County, City of Halifax, or City of Dartmouth.

(b). Were diagnosed as having a mental illness for a period of at least 1 year.

(c). Had been hospitalized at least once for a period no shorter than 7 days for this diagnosis.

(d). Were receiving some type of financial assistance from either Homes for Special Care, Family Benefits or Municipal Social Assistance.

There were 38 male and 24 female participants ranging in age from 23 to 79 years (M=51.968 ; SD=11.792). The primary diagnosis of the participants were as follows : 42 (66.7 percent) schizophrenic, 5 (8.1 percent) affective disorder, 5 (8.1 percent) substance abuse, 2 (3.2 percent) personality disorder, 2 (3.2 percent) organic brain syndrome, 2 (3.2 percent) anxiety disorder, and 4 (6.5

percent) with no recent diagnosis on file. the majority of residents had been at their present address between 1 to 5 years (46.8 percent). Table A-1 in Appendix A provides a summary of length of time at residence for the sample.

Measures

Recidivism: Outpatient recidivism was measured by averaging the number of outpatient visits to a mental health hospital with the number of months the resident had been living at the facility. Inpatient recidivism was measured by averaging the number of psychiatric admissions to hospital with the number of months the resident had been at the facility. An overall recidivism index was then obtained by adding the outpatient and inpatient recidivism scores (total recidivism). The participants gave their permission to obtain the recidivism data from their files on hand at the Residential Care Facilities.

Satisfaction : An extensive search failed to find a measure of satisfaction within a residential facility. The satisfaction measurement was devised after reviewing the methods of measuring this variable in the studies of LaMonica, Oberst, Madea and Wolf (1986) ; Urquhart, Bulow, Sweeney, Shear and Frances (1986) ; Bennett and Feldstein (1986). Reliability and validity data was not available from these studies. Measured on five levels in the present study - satisfaction with social activities, satisfaction with emotional well-being, satisfaction with residence, satisfaction with psychological help and overall satisfaction. The participants completed a 11 item questionnaire measuring these aspects of satisfaction (see Appendix B). The questions were derived from Urquhart et al. (1986) and were reversed for the respondents to control for order effect The

responses were given a rating from 1 (terrible) to 7 (delighted) on a Likert scale. When a response was not given, a neutral score of 4 was assigned. The total score of the responses for each participant was used as a measure of satisfaction.

Community Oriented Programs Environment Scale (COPES) : The COPES measured the clients' perception of their residential facility (Moos, 1974). The scale is a 100 item questionnaire requiring true/false responses. The scale is divided into ten subscales which assess relationship dimensions, treatment program dimensions and system maintenance dimensions.

Relationship dimensions are defined by the following subscales :

(1). Involvement - measures how active members are in the day-to-day functioning of their program, ie. spending time constructively, being enthusiastic, doing things on their own imitative.

(2). Support - measures the extent to which members are encouraged to be helpful and supportive towards other members, and how supportive the staff is towards members.

(3). Spontaneity - measures the extent to which the program encourages members to act openly and express their feelings openly.

Treatment dimensions are defined by the following subscales :

(1). Autonomy - assesses how self-sufficient and independent members are encouraged to be in making their own decisions about their personal affairs and in their relationships with staff.

(2). Practical Orientation - assesses the extent to which the member's environment orients him towards preparing himself for release from the program.

Such things as training for new kinds of jobs, looking to the future, and setting and working towards goals are considered.

(3). Personal Problem Orientation - measures the extent to which members are encouraged to be concerned with their personal problems and feelings and to seek and understand them.

(4). Anger and Aggression - measures the extent to which a member is allowed and encouraged to argue with members and staff to become openly angry and to display other aggressive behavior.

System maintenance dimensions are defined by the following subscales :

(1). Order and Organization - measures how important order and organization is in the program in terms of members (how do they look), staff (what do they do to encourage order) and the residence itself (how well is it kept).

(2). Program Clarity - measures the extent to which the member knows what to expect in the day-to-day routine of his program and how explicit the program rules and procedures are.

(3). Staff Control - assesses the extent to which the staff use measures to keep members under necessary controls ie., in the formulation of rules, the scheduling of activities and in the relationships between members and staff.

The normative data of the COPES was derived from 54 community based programs in order to represent those programs that are alternatives to hospitalization. Included were 2 rehabilitation workshops, 2 partial hospitalization programs, 11 halfway houses, 17 day centers, 20 foster homes, an outpatient support group, and a patient-run self-help unit. A total of 779 members were tested. The data showed the COPES to have acceptable internal consistency (mean=0.79) and moderate to high average item to subscale correlations (mean=0.41) (Moos, 1974a).

Level of Care Survey (LOCS) : The LOCS is a questionnaire of 101 items that seeks to identify those physical and mental conditions that interfere with the patient's ability to participate in treatment programs, interact with others and to manage his personal needs. It records sensory impairments, somatic conditions and the degree to which these interfere with function and skill levels in terms of daily living activities. From this information, two measurements, one of physical functioning and one of psychological functioning are derived. The LOCS was designed by the New York State Office of Mental Health in 1975 to assess the treatment needs of psychiatric inpatients according to their physical and mental health. The LOCS, developed by Furman and Lund (1979), is based on the assumption that the patients' functional status has greater applicability and relevance for appropriateness of level of care than do data concerning psychiatric diagnosis. Furman, Fabisiak and Hendrikson (1979) have reported several studies which support the validity of the LOCS. Fabisiak (1979) indicated an inter-rater reliability of around 0.80 for the LOCS.

Procedure

After receiving permission from the administrators of the Residential Care Facilities, residents were approached and asked to participate in a study that would be used for a Masters Thesis. It was explained that the questions would ask their opinions and views of their environment. The issue of confidentiality was also explained with the point being stressed that their responses would remain anonymous and not in any way affect their status or standard of living. Those who agreed to participate (89 percent) were asked to sign a consent form for release of file information (see Appendix C). Information is not available on

the 11 percent who refused to participate as data was considered confidential and not released. File and staff information was gathered on all participants to determine whether or not they had adequate cognitive and communication skills necessary to complete the questionnaires.

The COPES and satisfaction rating scales were verbally administered to the participants individually in a quiet secluded area of the residence. The two questionnaires were counterbalanced in order to control for order effect. The COPES questionnaire had an introductory explanation as follows:

> There are 100 short statements that I am about to read to you. These are statements about programs. Please decide which statements are true for your program or residence and which are not. When I read the statement to you, answer true when you think the statement is true or mostly true, and false when you think the statement is false or mostly false.

The satisfaction rating had an introductory explanation as follows :

> Please look at this. (Hand participant the Delighted-Terrible Scale). This is called the Delighted-Terrible Scale. Can you read it OK, or would you like some help? I am going to ask you about some different things in your

> life. All you have to do is tell me what on the scale best tells how you feel. For example, if you were someone who loves chocolate ice-cream, you might point to "delighted". On the other hand, if you hate chocolate ice-cream, you might point to "terrible". If you feel about equally satisfied and dissatisfied with chocolate ice-cream, then you would point to the middle of the scale. Do you have any questions about the scale?

A third questionnaire (LOCS) was administered to the primary care-giver within the facility determined to be the most familiar with the resident on a day-to-day basis. The questions on the LOCS were explained to the staff member and the author was present as the staff person completed the form. This subsequently determined physical and psychological well-being scores for each participant. The rates of recidivism were determined by accessing the residents' files which were at the Residential Care Facilities.

Data Analysis

The relationships between the outcome variables of the three measurements of recidivism and the predictor variables of the ten subscales and three dimensions of the COPES, psychological well-being and physical well-being were examined by Spearman Rho correlational analysis. The same correlational analyses were done using satisfaction as the outcome variable. Finally the

relationships between predictor variables and the relationships between outcome variables were examined using Spearman Rho correlational analysis.

An a priori analysis was done using logistic regression techniques to estimate the weighted contribution of each variable in the prediction of recidivism. Stepwise multiple regression was performed to estimate the weighted contribution of each variable in the prediction of satisfaction.

All analyses were performed using the software program GLIM, version 3.77 Royal Statistical Society, London.

RESULTS

Descriptive Analysis of the Outcome Variables

Appendix D, Table D-1 presents the measures of central tendency and variability of the outcome variables. An examination of this Table reveals that there was a high degree of variability in all three measures of recidivism. Participants in the study tended to have either zero or extremely high rates of recidivism. The greatest amount of variability occurred with the measure of outpatient recidivism (the range was 0 to 180). Of the 62 participants, 8 (12.9 percent) were outpatient recidivists. Inpatient recidivism ranged from 0 to 20 and 12 (19.4 percent) of the participants were inpatient recidivists.

The total rate of recidivism reflected both inpatient and outpatient rates. Four of the inpatient recidivists were also outpatient recidivists. Eight of the participants had been readmitted to hospital as inpatients only, while 8 of the participants had returned to hospital solely as outpatients. Of the 16 residents who had been in their place of residence for 1 year or less, none had were recidivists.

Recidivism data was collected for all 62 participants however only 50 (80.6 percent) had the cognitive or communication skills necessary to complete the questionnaires. An examination of the 12 participants who lacked the skills to respond to the testing, revealed that only 1 of them had an inpatient readmission while none were outpatient recidivists.

The outcome variable of satisfaction was measured for the 50 participants who were able to respond. This variable fell within a normal distribution. The mean satisfaction score was 58.4 with a range of 40 to 77. The highest possible rating of satisfaction was 77.

Descriptive Analysis of the Predictor Variables

Appendix D, Table D-1 presents the measures of central tendency and variability of the predictor variables of psychological well-being, physical well-being, and the dimensions and subscales measuring perceived psycho-social environment. An examination of the psychological and physical well-being measures show little variability. The possible range of scores for both psychological well-being and physical well-being as measured by the LOCS was from 1 to 10 with 1 indicating the highest level of functioning and 10 the lowest. In the present study all of the scores from the LOCS ranged from 1 to 3. See Appendix E, Table E-1 for the frequency of scores for psychological well-being and physical well-being.

The possible range of scores for the COPES subscales was 0 to 10 with the corresponding score reflecting how a respondent views the psycho-social environment. Thus a high score indicated that the respondent perceived the environment to have the trait described by the subscale and a low score indicated that a respondent did not perceive the environment as having the trait described by the subscale. Results in the present study showed that none of the subscales were normally distributed but rather were distributed symmetrically. The possible range of scores for the COPES dimensions of relationships and

system maintenance was between 0 to 30 and for treatment program between 0 to 40. Results in the present study indicated that all three of the COPES dimensions were normally distributed.

Relating Psycho-Social Climate to Community Survival

Hypothesis A-1 was supported. Table 1 presents the correlations between the three measures of recidivism with the dimensions and subscales of the COPES. Spearman Rho correlational analysis was performed as it does not make any assumptions about the underlying distribution of the data. An examination of the Spearman Rho correlations shows consistency in the relationships between perception of psychological well-being and recidivism. None of the dimensions of the COPES were significantly correlated with either inpatient or outpatient recidivism rates. However, one dimension of the COPES was significantly correlated with total recidivism that is, system maintenance was significantly negatively correlated with total recidivism ($r=-.28$, $p=.05$).

There was also consistency in the relationships between the measurements of recidivism and the COPES subscales. The only subscale that was significantly correlated with inpatient recidivism was staff control ($r=-.28$, $p=.05$). None of the subscales were significantly correlated with outpatient recidivism however two of the subscales did approach significance that is support ($r=-.28$, $p=.05$) and order and organization ($r=-.28$, $p=.05$). Finally, none of the subscales were significantly correlated with total rate of recidivism however staff control did approach significance ($r=-.27$, $p=.06$). Given the small number of participants, the significance of these results were limited. The effect of the relationships

however was consistently around 0.3. If more participants were involved in the study it is likely that the significance would have been increased.

Hypothesis B-1 was not supported. Table 1 presents the correlations between satisfaction with the dimensions and subscales of the COPES. None of the dimensions or subscales of the COPES were significantly correlated with the outcome measure of satisfaction.

In summary, correlational analysis indicated that residents' perceptions of their psycho-social climate were consistently related to community survival as measured by outpatient recidivism, inpatient recidivism, total recidivism and satisfaction.

Relating Psychological Well-Being to Community Survival

Hypothesis A-2 was supported. Table 1 presents the correlations between the three measures of recidivism with psychological well-being. Spearman Rho correlational analyses indicated that psychological well-being approached significance with rate of inpatient recidivism ($r=.23$, $p=.06$). Psychological well-being was significantly correlated with rate of outpatient recidivism ($r=.26$, $p=.04$). Psychological well-being was also significantly correlated with the total rate of recidivism ($r=.31$, $p=.01$). The effect of the correlation remained consistent around 0.3. The results indicated that as psychological well-being deteriorated, the rate of recidivism increased.

Hypothesis B-2 was supported. An examination of the Spearman Rho correlation matrix in Table 1 shows a lack of correlation between satisfaction and

Table 1
Spearman Rho Correlation Matrix for Recidivism Rates, Level of Satisfaction, Psychological Well-Being, Physical Well-Being and Perception of Psychosocial Environment

Variable	1	2	3	4	5	6
1. Inpatient recidivism	1.00					
2. Outpatient recidivism	.25*	1.00				
3. Total recidivism	.76**	.72**	1.00			
4. Satisfaction	-.04	-.22	-.22	1.00		
5. Psychological well-being	.23	.26*	.31*	-.26	1.00	
6. Physical well-being	-.03	.20	.15	-.05	.13	1.00
7. Relationship	-.09	-.15	-.13	.11	-.11	.02
8. Treatment program	-.11	-.00	-.06	-.02	.03	.14
9. System maintenance	-.23	-.23	-.28*	.11*	-.31*	-.02
10. Involvement	-.15	-.08	-.11	.21	-.17	.07
11. Support	-.02	-.28	-.16	.19	-.29*	-.03
12. Spontaneity	-.12	.05	.03	-.05	.17	.05
13. Autonomy	.01	-.08	.05	-.18	-.02	.07
14. Practical orientation	-.26	-.04	-.22	.15	-.07	.11
15. Personal problem orientation	-.01	-.03	-.00	-.21	.15	-.14
16. Anger & aggression	-.09	-.02	-.10	.12	.01	.40*
17. Order & organization	-.11	-.28	-.23	-.07	-.11	-.12
18. Program clarity	-.05	-.21	-.10	.10	-.21	.02
19. Staff control	-.28*	-.06	-.27	.22	-.35*	.10

*p<.05
**p<.0001

psychological well-being. They did however approach significance ($r=-.26$, $p=.06$). Again, the small sample size limited the significance of the correlation. This negative relationship indicated that as psychological well-being deteriorated, overall satisfaction became lower.

Relating Physical Well-Being to Community Survival

Hypothesis A-3 was not supported. Table 1 presents the correlations between the three measures of recidivism with physical well-being. Spearman Rho correlational analyses indicated that physical well-being was not significantly correlated with the outcome measures of inpatient recidivism, outpatient recidivism or total recidivism.

Hypothesis B-3 was not supported. An examination of the Spearman Rho correlation matrix in Table 1 indicates a lack of significant correlation between physical well-being and the outcome predictor of satisfaction.

Predicting Recidivism

Table 1 indicates few significant correlations between the measures of recidivism and the predictor variables. This in part may be due to the enormous variability in the rates of recidivism. In order to further analyze the prediction of recidivism the response variable was therefore considered as a dichotomous one: either a participant returned to hospital or a participant did not return to hospital. In this case, inpatient and outpatient recidivism rates were combined since participants suffering from any kind of hospitalization were considered.

This technique lost information about the seriousness of the rehospitalizations since using it gave no information about the number of times a participant was readmitted to hospital. On the other hand, using this technique had its advantages as it concentrated all of its power on trying to detect differences between two groups of people. This yes/no type of response variable was analyzed using logistic regression. In logistic regression, variables are identified which are correlated with the probability of recidivism and a measure of the magnitude of the effect is measured (Wonnacott and Wonnacott, 1981).

Prior to performing a logistic regression, each variable was initially checked for a quadratic relationship with recidivism. Only the COPES dimensions of relationship, system maintenance and treatment showed such a relationship. Thus, squared terms were used in the analysis for these variables. (Psychological well-being and physical well-being had linear relationships).

Results of the logistic regression analysis indicated that recidivism could be partially predicted from psychological well-being, treatment and treatment^2. Therefore Hypothesis A-4 was only partially s. .orted. Table 2 presents the regression results showing the relationship of predictor variables to recidivism. The final regression equation predicting recidivism form the predictor variables, presented in standardized format is:

$$\text{logit}(p) = -12.08\ (^{+}6.609) + (^{+}.4786)\ \text{psychological well-being} + 1.139\ (^{+}.7352)\ \text{treatment} - .03392\ (^{+}.0205)\ \text{treatment}^2$$

The results indicated that participants who scored the dimension of treatment as high or low have less of a probability of being rehospitalized than those who

scored in the middle range. With relation to psychological well-being, results indicated that participants who are rated as being the most well have less of a probability of returning to hospital than those who are rated more poorly. Of the deviance, 75 percent was not explained.

Table 2
Regression Results Showing Relationship of Predictor Variables to Recidivism

Variable in regression equation	Change in variance	p
Psychological well-being	8.94	.0028
Treatment[2]	4.34	.0370

Predicting Satisfaction

Stepwise multiple regression analysis was performed to determine the prediction of satisfaction from the measurements of psychological well-being, physical well-being and the three dimensions of the COPES. The stepwise procedure chose psychological well-being as the only variable to enter the model; however the regression was not significant ($p=0.13$). A look at the average values of satisfaction for the three scores of psychological well-being shows why the regression was not significant. Appendix F, Table F-1 presents the average value of satisfaction for psychological well-being scores. The three scores of psychological well-being were quite close on satisfaction especially considering the amount of variability.

Stepwise multiple regression analysis was performed to determine the prediction of satisfaction from the measurements of psychological well-being, physical well-being and the ten subscales of the COPES. Results of this analysis indicated that satisfaction could be partially predicted from the COPES subscales of autonomy, support, order and organization, and involvement (R= 0.51). Thus, Hypothesis B-4 was partially supported. Table 3 presents the regression results of the relationship of predictor variables to satisfaction. The final regression equation predicting satisfaction from the predictor variables, presented in standardized form is:

Satisfaction = 67.61 - 2.34 (autonomy) + 1.40 (support) - 1.71 (order & organization) + 1.19 (involvement)

Caution should be used in interpreting this equation in that when using the stepwise method with a small sample size, there is a high probability of variables entering due to chance.

Relationships Among Outcome Variables

Hypothesis C-1 was not supported. The Spearman Rho correlational matrix shown in Table 1 indicates that the outcome measure of satisfaction was not significantly correlated with inpatient recidivism, outpatient recidivism or total recidivism. Inpatient recidivism was significantly correlated with outpatient recidivism (r=.26, p=.04).

Table 3
Regression Results Showing Relationship of Predictor Variables to Satisfaction

Variables in regression equation	R	R^2 step	Beta	T*
Autonomy	0.30	0.09	-2.34	-3.14
Support	0.42	0.18	1.40	2.19
Order & organization	0.45	0.20	-1.71	-2.04
Involvement	0.51	0.26	1.19	1.78

* T value for a variable's beta weight in the final equation after all variables have been entered
** p<.05
***p<.000.

Relationships Among Predictor Variables

The Spearman Rho correlation matrix in Table 1 indicates few significant relationships among predictor variables. Psychological well-being was significantly negatively correlated with the COPES dimension of system maintenance (r=-.31, p=.03). Psychological well-being was also significantly negatively correlated with the COPES subscales of staff control (r=-35, p=.01) and support (r=-.29, p=.04).

Physical well-being was not significantly correlated with any of the COPES dimensions. It was however significantly correlated with one subscale of the COPES, that is anger and aggression (r=.40, p=.00). Physical well-being and psychological well-being were not significantly correlated.

There were a number of significant relationships between the subscales and the dimensions of the COPES. Table 4 presents a correlational analysis of the relationships between the subscales and dimensions of the COPES. An examination of the correlation matrix reveals that all three dimensions were correlated significantly with the subscales that defined them.

Table 4
Spearman Rho Correlation Matrix for the Dimensions and Subscales of the COPES

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Relationship	1.00												
2. Treatment program	.43*	1.0											
3. System maintenance	.48*	.10	1.0										
4. Involvement	.72**	.47*	.46*	1.00									
5. Support	.84**	.29*	.49*	.55**	1.00								
6. Spontaneity	.69**	.24	.12	.30*	.40*	1.00							
7. Autonomy	.47*	.68**	.16	.42*	.43*	.27	1.00						
8. Practical orientation	.24	.65**	.20	.38*	.23	.00	.26	1.00					
9. Personal problem orientation	.43*	.68**	.08	.36*	.21	.47*	.49*	.20	1.00				
10. Anger & aggression	-.08	.48*	-.10	.04		-.12	-.12	-.00	.30*	-.02	1.00		
11. Order & organization	.36*	-.07	.57**	.36*	.33*	.11	.03	.04	-.00	-.19	1.00		
12. Program clarity	.55**	.08	.77**	.45*	.52**	.20	.18	.13	.07	-.18	.43*	1.00	
13. Staff control	.24	.22	.56**	.33*	.31*	-.15	-.03	.40*	.02	.21	.09	.19	1.00

*p<.05
**p<.0001

DISCUSSION

The present study examined correlates of survival in deinstitutionalized mental health patients. An attempt was made to develop a more comprehensive explanation of survival by exploring social and psychological factors. The theoretical framework of social ecology was applied to two measurements of community adjustment. That is, recidivism and satisfaction. At issue was the extent to which these outcome measurements could be predicted by knowledge of clients' perception of their psycho-social environment, psychological well-being, and physical well-being and what the relative importance of these predictors would be.

The findings of the present study do support the hypotheses that perception of psycho-social environment and psychological well-being are predictive of patient survival as measured by recidivism. Physical well-being was not shown to be predictive of recidivism. Although there were a few significant correlations between the predictor variables and recidivism, only two of these variables emerged as being significant predictors of recidivism. That is, psychological well-being and the COPES dimension of treatment. The predictive power of these two variables however, is not high as 75 percent of the variance was not accounted for. It is evident that there is an effect which was either not fully captured by the variables studied or there may be underlying factors that simultaneously influence recidivism, yet are not accounted for.

It would appear from the results that psychological well-being is not significantly related to the pscyho-social climate scale of treatment, yet in combination they are significant predictors of recidivism. As predicted, as

psychological well-being deteriorated, the number of readmissions to hospital increased. It is also of interest that participants who viewed treatment either as extremely high or extremely low, were also at greater risk of recidivism. Using the social ecological approach to explore this effect, it may be inferred that patients who have fewer psychological symptoms are more likely to survive in the community if they are placed in environments that they perceive to either stress or ignore autonomy, practical orientation, personal problem orientation, and anger and aggression. Failure to recognize this patient-environment fit may increase an patient's likelihood of readmission to hospital.

A lack of significant results was also found when satisfaction was used as a measure of outcome. The predictor variables of psychological well-being and perception of psycho-social environment were found to be consistently related to satisfaction. In combination, autonomy, support, order and organization, and involvement were significant predictors of satisfaction. Again, the predictive power of these variables was not high as only 25 percent of the variance was accounted for. Thus, participants who viewed their environment as being highly supportive with involved members, and not much autonomy, and order and organization were likely to be more satisfied than residents who did not view their environment in this way. These results are similar to those of (Patton, 1977). Patton concluded that residents of supportive-participatory environments had better outcomes.

There was a lack of significance between satisfaction and recidivism. In assessing the effectiveness of satisfaction as an outcome variable, the relationship with recidivism is inconsequential. Growe, Klass, Rudolf and

Strizich (1977) maintained that recidivism is independent of other outcome criteria. Pryer, Distefano and Dinning (1982) similarly argued that client satisfaction as a predictor may be independent of the outcome measure of recidivism. The measurements of satisfaction in the present study did indicate however that in general, the participants appeared to have a high level of satisfaction. Caution must be applied in evaluating satisfaction as an outcome measure from this data as the scores may have a halo effect. This becomes particularly evident as the highest possible satisfaction score (77) was obtained in one case.

The only significant relationships that emerged between the predictor variables was that of psychological well-being with the COPES subscales of support and staff control and the COPES dimension of system maintenance. As these variables increased, the respondents' psychological symptoms decreased. This appears to be partially supportive of the social ecological theory which maintains that perception of psycho-social environment does have an impact on psychological well-being.

A major limitation of the present study was the small sample size. Although it was large enough to study the majority of the population in residential care facilities in the catchment area, it was not sufficiently large to justify a comparable analysis. Even the few significant correlations that emerged should be interpreted with caution due to the large number of correlations that were computed. Whenever a large number of analyses are performed, a certain number of them are expected to be significant by chance alone. Patterns of significance are indications that perhaps some relationship exists but further studies are called for to verify any apparent relationship.

The lack of correlations could also be due to the distributions of the variables. The data showed that with the exception of satisfaction and the dimensions of the COPES, the measurements had skewed distributions. Although Spearman Rho correlational analysis does not make any assumptions about the underlying distribution of the data, it is not a powerful analysis.

The ambiguity of the results in the present study resembles inconsistencies seen in findings from prior studies and suggests that recidivism is a complex phenomenon which can neither be predicted or explained through any single factor but only by examining the interaction of a variety of factors. The results do support the social ecology perspective, however, due to the overwhelming lack of significant results a critical evaluation of the methodology is warranted in order to further determine if the theoretical basis of this study has merit.

Methodological Issues

There are a number of methodological issues in the present study which will now be explored. In terms of the design of this study, there are some concerns. One concern is that the length of time subjects had been discharged from hospital varied. All other things being equal, someone who was discharged earlier is more likely to have required treatment than someone who was discharged a short time ago (Anthony, Buell, Sharratt and Althoff, 1972). From the data it is evident that none of the participants who had been at the facility for less than 1 year were rehospitalized. If only those residents who had been at the facility for over 1 year were studied, the rate of recidivism would have been higher. Of the 46 participants who had been at their present residence for over a year, 35 percent had been rehospitalized.

The design could have been improved to account for this concern by one of two ways. First, a certain length of time after discharge could have been selected to examine whether each participant had re-entered the hospital during that time period. (The time period would have had to be chosen so that all subjects had been at the residence for at least that length of time). The second way the design of this study could have been improved was by noting for each participant the date of discharge and the date(s) of all subsequent admissions to hospital. This would have provided the maximum amount of recidivism information on each subject. The technique of survival analysis could have then been used to analyze the lengths of time each person remains in the community without losing sight of the fact that all that is known about a person who has a zero rate of recidivism is that the person has been relapse-free for a certain period of time.

A second problem with the study is that in order to study factors which may be correlated with a condition (in this case recidivism), the factors should be measured before the condition, not after the condition has been treated. That is, one should study the participants now and then wait to see if they re-enter the hospital in the future. If a person returned to hospital it may be assumed that the person was treated and improved before being re-released and is now in a sense, a different person than the one who relapsed.

A third issue is the combination of inpatient and outpatient rates is also at question. In fact the numerical values of the rates seem to indicate that they are measuring very different things. This should be explored further in order to determine the nature of each measure.

Finally, the collection of data is an issue of concern. Much of the data in the present study was collected through subjective rating by both the participants (satisfaction, perception of psycho-social environment) and primary caregivers (psychological well-being, physical well-being). The use of such methods to obtain data has been one of concern in the literature. Drake and Wallach (1988) maintained that chronic mental health patients are too disorganized to behave effectively in congruence with their expressed attitudes. Jacobs, Aronson and Nystrom (1983) pointed out that clinical measures reflect the biases of the person providing the data and the amount or kind of information to which there is access. Clinically validated measures are further confounded by respondents' willingness to be cooperative while being assessed or by a tendency to behave in a socially desirable manner.

Fontana and Dowds (1975) maintained that primary caregivers could not be assumed to be objective raters as they may not have been indifferent to the nature of outcome. They concluded that patients' own account of their community behavior was slightly more predictive of rehospitalization than are their primary caregivers' accounts. The data however showed no basis for preferring one account over the other and both in combination were superior to one alone. Anthony, Cohen and Vitalo (1978) advocated for the use of subjective ratings. They maintained that ratings of symptoms by both discharged mental health patients and others in close contact with them was significantly related to recidivism.

Considering the controversy in using subjective ratings, responses from both the participants and primary caregivers in the present study may have biased the

results. That is, the participants may have rated their level of satisfaction and perception of their psycho-social environment inordinately low or high if they thought their status within the facility would be effected by their responses. Likewise when the primary caregivers were asked to complete the LOCS, their responses may have been biased by their own perceptions of the study. For example the caregivers may have viewed their responses as being reflective of the quality of care they are able to provide. Thus, if a resident of their facility required more supports or care than they could offer, the resident would have been deemed inappropriately placed which may ultimately reflect poorly on the facility. Similarly, participants were chosen to respond to the questionnaires as determined by the primary caregivers' response on the LOCS. This subjective rating of the participants by caregivers may have eliminated some residents who were capable of participating. There is also a possible bias of selecting only those residents that would give appropriate responses. A mini-mental status test administered to all participants prior to testing would have eliminated these concerns.

Measurements of Outcome

The present study used recidivism and satisfaction as outcome measures. Each variable has its advantages and limitations as described earlier in this study. The criterion of both of these measures must be examined before coming to any conclusion. Because of possible skewing from sample error and duration of follow-up, any investigation of predictor and outcome must be accepted with reservation pending replication. Failure to predict outcome more accurately may have been caused by the effects of treatment intervention or measurement error.

It is more likely that much of the unpredictability arises from variables still unrecognized that have an important effect on outcome.

The recidivism rates in this study do not fall within reported estimates. The base rate suggested by Anthony et al. (1972) is 40 to 50 percent of patients are rehospitalized 12 months after discharge. Anthony et al. also maintained that despite variety in populations, institutions and regions, this recidivism data shows consistency. The recidivism rates in the present study do not approach these base rates.

The base rates of recidivism that Anthony et al. (1972) advocated however may have not been relevant to the population used in the present study. Chandrasena (1987) argued that most of the literature refers to studies in the United States and could not be generalized to Canadian hospitals due to differences in the health care systems and committal acts. Even within Canadian studies the comparability across studies is limited as there are wide provincial differences in deinstitutionalization. The Nova Scotia government for example, has taken an unique approach to this. In Nova Scotia during the 1970's the responsibility of caring for chronic mental health patients was shifted from the Department of Health to the Department of Social Services. Over one half of the deinstitutionalized population were transferred to social service facilities. This approach allowed for a mechanism to ensure ongoing psychiatric treatment (Richman and Harris, 1983).

It has been advocated that the supports available in the community will affect the rates of recidivism. Bachrach (1981) maintained that the availability of alternative facilities in the community was one exceedingly important variable

influencing rehospitalization. Dorwart (1988) similarly argued that the composition of institutionalized patients in hospital has changed in that there was a renewal of emphasis on acute rather than chronic care. Dorwart stated that this change may have been related to developments in mental health systems such as the creation of community residences. Bassuk and Gerson (1978) maintained that between one half and three quarters of hospital readmissions could have been avoided if comprehensive community facilities had existed. Finally, Clinger, Fine, Johnson, Schwartzman and Drude (1988) pointed out that psychiatric patients' lack of self management and basic living skills was related to increased recidivism rates. The participants in the present study were all residents of a residential care facility (RCF). The RCF provided a structured milieu and long term care where the social, medical and psychiatric needs of the residents were continuously monitored. One possible assumption therefore is that because of the nature of the care facility, lower rates of recidivism would be expected.

From a social ecological perspective, one could theorize that the rates of recidivism were low because there was a good person-environment fit. Moos (1974b) maintained that individuals who viewed their psycho-social environment below the normative perception of their reference group had significantly poorer outcomes. The measurements of the COPES subscales in the present study tended to be skewed with extreme scores. It may therefore, be worthwhile to look at those participants who scored below the norm of the rest and examine if they had significantly higher rates of recidivism.

Despite the psycho-social environment of the facility, the low rates of recidivism found in the present study may have been due to a methodological

error. That is, this study failed to differentiate between those participants who had recently been admitted to the facility and those who had been there for longer. As outlined earlier the design could have been improved in order to give a more representative picture of recidivism. Also of interest is the lack of recidivism rates for those participants who were not able to respond to the questionnaires. The inclusion of these participants may have biased the results. It may have also been helpful to investigate the validity of the outpatient rates of recidivism by checking with the outpatient services to confirm the amount of contacts participants actually had.

The methodological problems inherent in measuring satisfaction have been explored earlier. The lack of information about the reliability and validity of the measurements of satisfaction may have effected the results. That is, the measurement used in the present study may not have given a true reflection of satisfaction. Furture research may look to quality of life indices for more validated measures of satisfaction (Zastowny and Lehman, 1988). Zastowny and Lehman (1988) advocated for research on satisfaction that would emphasize those dimensions that provide for replication. They maintained that the study of special populations such as acute inpatients and chronic outpatients should be continued so that specific dimensions of satisfaction can emerge in relation to the specific aspects of experiences of different patients.

LaMonica, Oberst, Madea and Wolf (1986) maintained that lack of score variability renders many measures of satisfaction virtually useless. They advocated that satisfaction was a multidimensional concept that was dependant upon the characteristics and attitudes an individual brought to a situation, as well

as their definition of their environment and their perception of need for care. Finally, given the continually changing psychological and physical status experienced by most mentally ill individuals, stability of expectations was unlikely. Considering the possible multidimensional aspects of satisfaction, the instrument used to measure it in the present study may have had too narrow a focus. This may have engendered a response bias and a positive halo effect.

The problems inherent in measuring satisfaction may have resulted in artificially high rates. In the present study there was a systematic bias favouring the reporting of more satisfied patients by the very nature that they were still living in the facility. Thus one possible assumption was that due to variability and range of care supplied by the Ministry of Social Services and the intervention of social workers, dissatisfied residents were given the opportunity to live in alternative housing. The rating of satisfaction may have also be a function of social desirability, implicit threat and item wording.

Measurements of Predictor Variables

The use of the LOCS to measure psychological and physical well-being was conceptually sound. Baker and Hall (1988) advocated the use of such observation based scales as they are based on the judgements of the care staff most in contact with the patient, are relatively quick to complete and measure the sort of spontaneously occurring behavior that is relevant to everyday living. Massey, Pokorny and Kramer (1989) maintained that client functioning is generally seen as relatively independent of diagnosis and potentially important in predicting community tenure. They advocated that the level of functioning of

psychiatric patients should include at a minimum measures of community living skills, self care skills, presence of nuisance behaviors, sociability and proclivity for violence. The LOCS does address these aspects of patient behavior. The measures in the present study however were limited in their range. This may in part be due to the nature of the facility in that the residence is only equipped to deal with a limited range of functioning and supports are in place to maintain the residents at that level.

The use of the COPES in determining the participants' perception of their psycho-social environment was also conceptually sound as determined from the normative data (Moos, 1974a). The results in the present study showed high inter-correlations between subscales and dimensions. This may be indicative of questionable validity as each item of the COPES should correlate more highly with its own than with any other subscale. Also at issue was the lack of significant relationships with other variables. Moos (1974a) maintained that involvement, support and spontaneity were positively related to satisfaction. The present study found no significant relationship between these variables. Finally, the subjective nature of the reporting urges that caution be taken in interpreting the results.

Conclusion

As shown in the literature, a more precise understanding of the nature of community survival in the chronic mentally ill is needed. This is especially relevant considering the increasing costs to hospitals and the health care system when community tenure fails. It is important to know whether certain patients

with particular characteristics are more likely to adapt to life in the community regardless of the kinds of treatment or aftercare they receive. Wan and Ozcan (1991) pointed out that a comprehensive community assessment of mental health needs should ideally identify performance indicators reflecting organizational interventions and individual patient characteristics. The conceptual framework implemented in the present study may be adequate as shown by the tenuous results. This can only be determined however, with modifications in the methodology.

There is a need to further search for correlates of successful adaptation that can operationally define and recognize that community adaptation is a multidimensional construct that is a process of adjustment. This concept of outcome has important theoretical and practical implications. It suggests that multiple etiologies need to be considered for psychiatric disability. The cause of readmission may be quite different from the cause of symptomology. Each of the different areas of disability needs to be assessed in evaluating psychiatric disorder and treatment response. A single measure of disability such as hospitalization is useful only as a crude measure.

The Residential Care Facilities represented a unique group for study because size, staffing, and monthly cost per person were almost identical in all cases. Ellison, Blum and Barsky (1986) pointed out it was possible that recidivists comprised distinct subgroups with differing characteristics that were cancelled out in a group study. They advocated therefore that subgroups of patients should be examined independently. Wasylenki, Goering, Lancee, Fisher and Freeman (1985) however stressed the need for following all discharge patients

instead of selecting those with a particular diagnosis, living situation or treatment. The use of selecting a distinct group for the present study did not allow for powerful statistical analysis and the focus may have been too narrow. Implicit in this analysis was the assumption that perception of psycho-social environment, psychological well-being and physical well-being are all manipulative variables that may be affected by care environment. Unfortunately the nature of the study makes it impossible to assess discharged psychiatric patients in a variety of settings. Cross sectional data is required to provide a more direct test of the social ecology theory. Wan and Ozcan (1991) maintained that to date, studies of psychiatric hospitalization have not used data obtained from different sources fully enough to portray a comprehensive picture of community survival.

Other studies have advocated for the use of longitudinal data in order to predict community survival. Fontana and Dowds (1975) maintained that relatively enduring characteristics could be expected to come into play progressively as situational effects become attenuated over time. Thus studying one particular time period may have selectively favored one domain of predictors and penalized another. Dorwart (1988) advocated for clinical research with a longitudinal approach so that questions unanswered by cross sectional studies may be addressed. The limited focus in this study of examining distinct groups in a limited time period does not allow for a thorough analysis of deinstitutionalized mental health patients. The current study has focused on factors that may impede community survival. In doing so, structural factors such as housing have been held constant. These need to be examined in conjunction with client characteristics in future studies.

The present study was plagued with measurement and methodological errors that may have effected the outcome. Therefore, the results from the present study must be interpreted with caution. The patterns that emerged however warrant further pursuit of these variables in assessing community tenure.

REFERENCES

Anthony, W.A., & Buell, G.J. (1974). Predicting psychiatric rehabilitation outcome using demographic characteristics: a replication. *Journal of Counselling Psychology, 21,* 421-422.

Anthony, W.A., Buell, G.J., Sharratt, S., & Althoff, M.E. (1972). Efficacy of psychiatric rehabilitation. *Psychological Bulletin,78,* 447-456.

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

Avison, W.R., & Speechley, K.N. (1987). The discharged psychiatric patient: a review of social, social-psychological, and psychiatric correlates of outcome. *American Journal of Psychiatry, 144,* 10-18.

Bachrach, L.L. (1976). A note on some recent studies of released mental hospital patients in the community. *American Journal of Psychiatry 133(1),* 73-75.

Bachrach, L.L. (1981). Continuity of care for chronic mental patients: a conceptual analysis *American Journal of Psychiatry, 138(11),* 1449-1456.

Baker, R., & Hall, J.N. (1988). REHAB: a new assessment instrument for chronic psychiatric patients. *Schizophrenia Bulletin, 14(1),* 97-111.

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

Bennett, M.J., Feldstein, M.L. (1986). Correlates of patient satisfaction with mental health services in a health maintenance organization. *American Journal of Preventive Medicine, 2,* 155-162.

Buell, G.J., & Anthony, W.A. (1973). Demographic characteristics as predictors of recidivism and post-hospital employment. *Journal of Counselling Psychology, 20,* 361-365.

Byers, E.S., Cohen, S. & Harshbarger, D.D. (1978). Impact of aftercare services on recidivism of mental hospital patients. *Community Mental Health Journal, 14(1),* 26-34.

Casper, E.S., & Pastva, G. (1990). Admission histories, patterns and sub-groups of the heavy users of a state psychiatric hospital. *Psychiatric Quarterly, 61,* 121-134.

Caton, C.L.M. (1982). Effect of length of inpatient treatment for chronic schizophrenia. *American Journal of Psychiatry, 139(7),* 856-861.

Caudill, W. (1958). *The Psychiatric Hospital as a small society.* Harvard University Press, Cambridge, Mass.

Chandrasena, R. (1987). Premature discharges: a comparitive study. *Canadian Journal of Psychiatry,32,* 259-263.

Clinger, M.D., Fine, M.A., Johnson, J., Schwartzman, J., & Drude, K.P. (1988) Assessment of the psychometric properties of the adaptive behavior scale with psychiatric patients. *Journal of Consulting and Clinical Psychology, 56 (4),* 542-548.

Cobb, S., French, J., Kahn, R., & Mann, F. (1963). An environmental approach to mental health. *Annals of the New York Academy of Science, 107,* 596-606.

Dellario, D.J., & Anthony, W.A. (1981). On the relative effectiveness of institutional and alternative placement for the psychiatrically disabled. *Journal of Social Issues, 37(3),* 21-33.

DiScipio, W.J., & Sommer, G. (1973). Therapeutic failures: patients who return within 30 days of hospital discharge. *Psychiatric Quarterly, 47,* 371-376.

Dorwart, R.A. (1988). A ten-year follow-up study of the effects of deinstitutionalization. *Hospital and Community Psychiatry, 39(3),* 287-291.

Drake, R.E., & Wallach, M.A. (1988). Mental patients' attitudes towards hospitalization: a neglected aspect of hospital tenure. *American Journal of Psychiatry, 145(29),* 29-34.

Ellison, J.M., Blum, N., & Barsky, A.J. (1986) Repeat visitors in the psychiatric emergency service: a critical review of the data. *Hospital and Community Psychiatry, 37,* 37-41.

Emerson, E.B., & Pretty, G.M.H. (1985). *From rhetoric to reality: evaluating process and outcome in community-based residential facilities..* Unpublished manuscript. University of Kent at Canterbury, Canterbury, England.

Fabisiak, S. (1979). Levels of Care. *Ripple,15,* 1-6.

Fischer, L.A., Goering, P.N., Lancee, W.J., & Wasylenki, D.A. (1981). *Psychiatric aftercare in Metropolitan Toronto.* Community Resource Consultants of Toronto and Social and Community Psychiatry Section Clarke Institute of Psychiatry, 1-73.

Fontana, A.F., & Dowds, B.N. (1975). Assessing treatment outcome,II: the prediction of rehospitalization. *The Journal of Nervous and Mental Disease, 161,* 231-238.

Franklin, J.L., Kittredge, L.D., & Thrasher, J.H. (1975). A survey of factors related to mental hospital readmissions. *Hospital and Community Psychiatry, 26,* 749-751.

Furman, W.M., Fabisiak, S.W., & Henrikson, C.E., (1979). Comments on Greenstein, Marion and Mirotznik. *Journal of Psychiatric Treatment and evaluation, 1(2),* 40-42.

Furman, W.M., & Lund, D.A. (1979). The assessment of patient needs: description of the level of care survey. *Journal of Psychiatric Treatment and Evaluation, 1(2),* 40-42.

Geller, J.L. (1986). In again, out again: preliminary evaluation of a state hospital's worst recidivists. *Hospital and Community Psychiatry,37,* 386-390.

Grob, G. (1966). *The State and the Mentally Ill: A History of Worcester State Hospital in Massachusetts, 1830-1920.* University of North Carolina Press, Chapel Hill.

Growe, G.A., Klass, D.B., Rudolf, D., & Strizich, M. (1977). Community tenure and an assessment of readiness for discharge and community living. *Psychological Reports,41,* 1339-1342.

Harris, M., Bergman, H.C., & Bachrach, L.L. (1986). Psychiatric and nonpsychiatric indicators for rehospitalization in a chronic patient population. *Hospital and Community Psychiatry, 37,* 630-631.

Holmes-Eber, P., Riger, S. (1990). Hospitalization and the composition of mental patients' social network. *Schizophrenia Bulletin, 16*, 157-164.

Jacobs, J.A., Aronson, H., & Nystrom, B. (1983). Recidivism as a follow-up methodology. *Journal of Community Psychology, 11*, 224-227.

Kalman, T.P. (1983). An overview of patient satisfaction with psychiatric treatment. *Hospital and Community Psychiatry, 34*, 48-54.

Kiritz, S., & Moos, R. (1974). Physiological effects of social environments. *Psychosomatic Medicine, 36*, 96-114.

Klass, D., Growe, G., & Strizich, M. (1977). Ward treatment milieu and post-hospital functioning. *Archives of General Psychiatry,34*, 1047-1052.

LaMonica, E.L.,Oberst, M.T., Madea, A.R., & Wolf, R.M. (1986). Development of a
patient satisfaction scale. *Research in Nursing and Health, 9*, 43-50.

Lawton, M., Lipton, M., & Cohen, J. (1976a). *The mental hospital treatment milieu: patients' perception and related treatment quality.* Norristown State Hospital, Norristown, PA.

Lebow, J. (1982). Consumer satisfaction with mental health treatment. *Psychological Bulletin, 91*, 244-259.

Mason, J. (1968). A review of psychoendrocine research on the pituary-adrenal cortical system. *Psychosomatic Medicine, 30*, 576-607.

Massey, O.T., Pokorny, L.J., & Kramer, B. H. (1989). The development of factor-based level of functioning scales from a level of care instrument. *Journal of Clinical Psychology, 45(6)*, 903-909.

May, P.R., Tuma, A.H., Yale, C., Potepan, P., & Dixon, W.J. (1976). Schizophrenia-a follow-up study of results of treatment: II hospital stay over two to five years. *Archives of General Psychiatry,33*, 481-486.

McPhee, C.B., Zusman, J., & Joss, R.H. (1975). Measurement of patient satisfaction: a survey of practices in community mental health centres. *Comprehensive Psychiatry, 16*, 399-404.

Miller, G.H., & Willer, B. (1976). Predictors of return to a psychiatric hospital. *Journal of Consulting and Clinical Psychology, 44*, 898-900.

Moos, R. (1972). Assessment of the psychosocial environments of community-oriented psychiatric treatment programs. *Journal of Abnormal Psychology, 79*, 9-18.

Moos, R. (1974a). *Community Oriented Programs Environment Scale Manual.* Consulting Psychologists Press Inc.

Moos, R. (1974b). *Evaluating Treatment Environments: A Social ecological Approach.* New York: Wiley and Sons.

Moos, R. (1984). Context and coping: toward a unifying conceptual framework. *American Journal of Community Psychology, 12(1)*, 5-37.

Moos, R., & Bromet, E. (1978). Relation of patient attributes to perceptions of the treatment environment. *Journal of Consulting and Clinical Psychology, 46*, 350-351.

Moos, R., & Schwartz, J. (1972). Treatment environment and treatment outcome. *Journal of Nervous and Mental Disease, 154*, 264-275.

Mosher, L.R., & Keith, S.J. (1979). Research on the psychosocial treatment of schizophrenia: a summary report. *American Journal of Psychiatry,136(5)*, 623-631.

Olshansky, S. (1968). Some assumptions challenged. *Community Mental Health Journal, 4*, 153-156.

Pablo, R.Y., Kadlec, K.E., & Arboledo-Florez, J. (1986). The readmission of psychotic patients to a general hospital psychiatric unit. *General Hospital Psychiatry, 8*, 190-197.

Patton, M. (1977). *Environments that make a difference: an evaluation of Ramsey County Corrections Foster Group Homes.* Centre for social research, University of Minnesota, Minneapolis, MN.

Paul, G.L. (1979). New assessment systems for residential treatment, management research and evaluation: a symposium. *Journal of Behavioral Assessment, 1(3)*, 181-184.

Pryer, M.W., Distefano, M.K., & Dinning, W.D. (1982). Clients' satisfaction and rehospitalization among psychiatric patients. *Psychological Reports, 50*, 629-630.

Pryer, M.W., & Distefano, M.K. (1986). Follow-up of participants in a vocational rehabilitation program at a state hospital. *Hospital and Community Psychiatry, 37,* 1261-1262.

Rapaport, R. (1960). *Community as Doctor.* Tavistock, London.

Richman, A., & Harris, P. (1983). Mental hospital deinstitutionalization in Canada a national perspective with some regional examples. *International Journal of Mental Health, 11(4),* 64-83.

Serban, G., & Gidynski, C.B. (1974). Significance of social demographic data for rehospitalization of schizophrenic patients. *Journal of Health and Social Behavior, 15,* 117-126.

Sorenson, J., Kantor, L., Margolis, R., & Galano, J. (1979). The extent, nature and utility of evaluating consumer satisfaction in community mental health centers. *American Journal of Community Psychology, 7,* 329-337.

Stanton, A., & Schwartz, M. (1954). *The Mental Hospital: A Study of Institutional Participation in Psychiatric Illness and Treatment.* Basic Books, New York.

Strauss, J.S., & Carpenter, W.T. (1974). The prediction of outcome in schizophrenia. *Archives of General Psychiatry, 31,* 37-42.

Strauss, J.S., & Carpenter, W.T. (1977). Prediction of outcome in schizophrenia: five year outcome and its predictors. *Archives of General Psychiatry,34,* 159-163.

Tessler, R.C., & Manderscheid, R. (1982). Factors affecting adjustment to community living. *Hospital and Community Psychiatry, 33,* 203-207.

Urquhart, B., Bulow, B., Sweeney, J., Shear, M.K., & Frances, A. (1986). Increased specificity in measuring satisfaction. *Psychiatric Quarterly, 58,(2),* 128-134.

Wan, T.T.H., & Ozcan, Y.A. (1991). Determinants of psychiatric rehospitalization: a social area analysis. *Community Mental Health Journal, 27,* 3-16.

Ware, J.E. (1978). Effects of acquiescent response set on patient satisfaction ratings. *Medical Care, 16,* 327-336.

Ware, J.E., Davies-Avery, A., & Stewart, A.L. (1978). The measurement and meaning of patient satisfaction. *Health and Medical Care Services Review, 1,* 2-15.

Wasylenki, D., Goering, P., Lancee, W., Fischer, L., Freeman, S.J.J. (1985). Psychiatric aftercare in a metropolitan setting. *Canadian Journal of Psychiatry,30,* 329-336.

Willer, B., & Biggen, P. (1976). Comparisons of rehospitalized and nonrehospitalized psychiatric patients on community adjustment self-assessment guide. *Psychiatry, 39,* 239-243.

Willer, B., & Miller, G.H. (1978). On the relationship of client satisfaction to client characteristics and outcome treatment. *Journal of Clinical Psychology, 34,* 157-160.

Wonnacott, T.H., & Wonnacott, R.J. (1981). *Regression, A second course in statistics.* Wiley, New York.

Zastowny, T.R., Lehman, A.F. (1988). Patient satisfaction with mental health services. *QRB , 14(9),* 284-289.

Appendixes

Appendix A

Table A-1

Length of Time Particpants Were at Residence

Length of time at residence	N	Percent
Less than 1 month	1	1.6
1 month to less than 3 months	2	3.2
3 months to less than 6 months	5	8.1
6 months to less than 1 year	8	12.9
1 year to less than 3 years	14	22.6
3 years to less than 5 years	15	24.2
5 years to less than 10 years	6	9.7
Over 10 years	11	17.7

APPENDIX B

THE FOLLOWING QUESTIONS THAT MEASURE DIFFERENT DIMENSIONS OF SATISFACTION ARE SCORED BY THE FOLLOWING SCALE:

1	2	3	4	5	6	7
Terrible	Unhappy	Mostly Dissatisfied	Mixed (equally Satisfied & Dissatisfied)	Mostly Satisfied	Pleased	Delighted

SATISFACTION WITH RESIDENCE

How do you feel about: (using the above scales)

a) The living arrangements here _____

b) The food here_____

c) The rules here _____

d) The other people who live here _____

e) The privacy you have _____

f) The amount of freedom you have here _____

g) How would you feel about the prospect of staying here for a long time_____

SATISFACTION WITH SOCIAL ACTIVITIES

Do you feel that there are alot of social activities for you to be part of?
Use Scale _____

SATISFACTION WITH EMOTIONAL WELL-BEING

How do you feel about your emotional well-being?
Use Scale _____

SATISFACTION WITH PSYCHOLOGICAL HELP

How do you feel about the psychiatric help you are receiving?
Use Scale _____

OVERALL SATISFACTION

Taking all things together, how would you say your life has been?
Use Scale_____

APPENDIX C

CONSENT FORM

I agree to participate as a subject in a study which considers my opinions and views of my residence.

This study requires information about me which is confidential throughout the study and thereafter. Any publication based on this information will not in any way identify me, but will describe groups of subjects in which I may be a member, but always anonymously. I give permission to the study project staff to have access to my medical and social assistance files. They may also converse with my social worker/caregivers regarding the subject matter of this research.

I understand that my decision to participate will not influence in any way the nature and quality of my present situation.

Signed:_____

Date:_____

Witnessed:_____

Date:_____

APPENDIX D

Table D-1
Measures of Central Tendency and Variability for Outcome and Predictor Variables

Variable	N	Mean	Std Dev	Median	Min	Max
Outcome Variables						
Inpatient recidivism	62	1.16	3.29	0	0	20
Outpatient recidivism	62	9.61	36.99	0	0	180
Total recidivism	62	10.77	37.21	0	0	180
Satisfaction	50	58.40	8.69	57.5	40	77
Predictor Variables						
Psychological well-being	62	1.73	.79	2	1	3
Physical well-being	62	1.81	.62	2	1	3
COPES Dimensions						
Relationship	50	16.32	5.05	16	5	25
Treatment	50	18.38	4.86	18	7	30
System maintenance	50	20.20	3.52	20.5	11	27
COPES SUBSCALES						
Involvement	50	5.20	2.14	5	1	10
Support	50	6.36	2.26	6	2	10
Spontaneity	50	4.60	1.78	5	1	9
Autonomy	50	5.10	1.74	5	2	9
Practical orientation	50	4.74	1.89	5	1	9
Personal prob. orientation	50	4.12	2.06	4	0	8
Anger & aggression	50	4.42	1.86	4	1	8
Order & organization	50	7.24	1.49	7	3	10
Program clarity	50	6.54	1.79	7	2	10
Staff control	50	6.60	1.83	7	2	10

Appendix E

Table E-1

Frequency of Scores of Psychological and Physical Well-Being

Psychological functioning	Frequency	Percent	Cumulative frequency	Cumulative percent
1	30	48.4	30	48.4
2	19	30.6	49	79.0
3	13	21.0	62	100.0

Physical functioning	Frequency	Percent	Cumulative frequency	Cumulative percent
1	19	30.6	19	30.6
2	36	58.1	55	88.7
3	7	11.3	62	100.0

Appendix F

Table F-1

Average Value of Satisfaction for Psychological Well-Being Scores

Psychological well-being score	N	Mean value of satisfaction	Standard Deviation	Median
1	26	60.88	8.39	63
2	15	54.53	8.14	56
3	9	57.67	8.80	58