University of Nebraska - Lincoln
DigitalCommons@University of Nebraska - Lincoln

Theses, Dissertations, and Student Research: Department of Psychology

Psychology, Department of

7-25-2006

CHARACTERISTICS OF STAFF-PATIENT INTERACTIONS ON A BEHAVIORAL TREATMENT UNIT FOR PATIENTS WITH SERIOUS MENTAL ILLNESS, AND THE EFFECTS OF A BEHAVIOR MANAGEMENT TRAINING PROGRAM ON STAFF PERFORMANCE

Lindsay S. Schenkel
University of Nebraska, lindsay.schenkel@att.net

Follow this and additional works at: http://digitalcommons.unl.edu/psychdiss

Part of the Psychiatry and Psychology Commons

Schenkel, Lindsay S., "CHARACTERISTICS OF STAFF-PATIENT INTERACTIONS ON A BEHAVIORAL TREATMENT UNIT FOR PATIENTS WITH SERIOUS MENTAL ILLNESS, AND THE EFFECTS OF A BEHAVIOR MANAGEMENT TRAINING PROGRAM ON STAFF PERFORMANCE" (2006). *Theses, Dissertations, and Student Research: Department of Psychology.* Paper 1.
http://digitalcommons.unl.edu/psychdiss/1

This Article is brought to you for free and open access by the Psychology, Department of at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in Theses, Dissertations, and Student Research: Department of Psychology by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.

CHARACTERISTICS OF STAFF-PATIENT INTERACTIONS ON A BEHAVIORAL TREATMENT UNIT FOR PATIENTS WITH SERIOUS MENTAL ILLNESS, AND THE EFFECTS OF A BEHAVIOR MANAGEMENT TRAINING PROGRAM ON STAFF PERFORMANCE

A DISSERTATION

By

Lindsay S. Schenkel

Presented to the Faculty of

The Graduate College at the University of Nebraska

In Partial Fulfillment of Requirements

For the Degree of Doctor of Philosophy

Major: Psychology

Under the Supervision of Professor William D. Spaulding

Lincoln, Nebraska

July, 2006

©Copyright by
Lindsay S. Schenkel
2006

CHARACTERISTICS OF STAFF-PATIENT INTERACTIONS ON A BEHAVIORAL TREATMENT UNIT FOR PATIENTS WITH SERIOUS MENTAL ILLNESS, AND THE EFFECTS OF A BEHAVIOR MANAGEMENT TRAINING PROGRAM ON STAFF PERFORMANCE

Lindsay S. Schenkel, Ph.D.

University of Nebraska, 2006

Advisor: William D. Spaulding

Despite the existence of effective psychological interventions for people diagnosed with schizophrenia, these continue to be underutilized. This problem is most critical in the case of so called “treatment-refractory” patients, where, paradoxically, effective interventions with among the strongest evidence base in psychiatry exist – namely – inpatient social-learning-based rehabilitation programs. Barriers to implementation and effective maintenance of such programs include a low frequency of staff-patient interactions and a relatively high frequency of non-therapeutic staff behaviors, lack of staff training and background in behavioral treatment, negative attitudes towards behavioral interventions, and tension between professional disciplines. This study examined the nature and frequency of staff-patient interactions on an inpatient behavioral psychiatric treatment unit for individuals who suffer from severe and persistent mental illness. A second aim of this study was to determine the effects on staff performance of a mandatory training program in behavior management. Effects were

examined pre-post, as well as by professional discipline. At baseline, clinical staff displayed significantly more therapeutic behaviors and significantly fewer negative behaviors compared to medical staff when interacting with patients. This pattern of differences between the two groups persisted to post-training. Unexpectedly, clinical staff displayed fewer instances of instructing and staff to staff conversations compared to medical staff. From pre- to post-training, all staff demonstrated increased positive and therapeutic behaviors and decreased instances of negative behaviors when interacting with patients. Performance on both written and in-vivo staff assessment at post-training was significantly correlated with improved staff-patient interactions on the unit after training, most notably on measures of negative staff-patient interaction. Although both written and in-vivo test scores significantly predicted change in negative staff behaviors, the in-vivo test performance increased predictive ability over and above that of written test performance. Staff who disagreed with social learning and behavioral management principles displayed less improvement in negative behaviors from pre- to post-assessment compared to other staff. These data have implications for clarifying staff training needs in programs for chronically ill people with serious mental illness.

ACKNOWLEDGMENTS

There are a number of people I wish to thank for their help, support, and guidance. In the formative years of my research training, I am grateful to have worked under the supervision of Dante Cicchetti and Sheree Toth who taught me a great deal about the importance of sound research methodology.

Will Spaulding, my advisor, has provided me with a large amount of support throughout this process. I am very grateful for his guidance and mentorship, and for the freedom he has allowed me to pursue a range of clinical and research interests. Because of this, I have accrued a wealth of information and skills. Most importantly, I have learned to think independently. I am also very appreciative of the time, attention, and helpful feedback of my committee members David DiLillo, Calvin Garbin, and Susan Swearer.

This project would not have been possible if not for Sandra Wilkniss and Adam Savitz at New York Presbyterian Hospital - Cornell Medical Center where this study took place. Sandra was extremely generous in providing me with the opportunity to incorporate her staff-training project into an interesting and meaningful research study. She invested a significant amount of time and energy in the project (far too much to put into words) – I am extremely grateful for her help, mentorship, and support. Adam provided strong support to insure that the staff-training project was able to take place. I am also grateful to the unit staff on the Second Chance Program, without whom this study would not have been possible.

I am lucky to have a number of wonderful friends and colleagues who have provided me with invaluable advice and support. I am very grateful to Mary Spagnola,

Kirsten VanMeenen, and Marissa Heuer. A special thank you to Gail Rothman-Marshall. She was willing to take me under her wing and provide me with unconditional encouragement and guidance; she has been a wonderful mentor and friend.

I am very grateful to my parents, Jack Schenkel and Janet Barkstrom, and my grandfather Albert Zagami, who taught me the value of hard work and persistence. Without their love, support, and encouragement this would not have been possible. I am also grateful to my brother, Christopher Schenkel, who has always been willing to lend a helping hand and whose love has been unconditional. I would also like to thank Bob Barkstrom for his positive attitude and knack for keeping things upbeat. Finally, I am particularly grateful to Steven Silverstein, my life partner, whose encouragement, assistance, and support gave me the confidence to continue in this long journey. Professionally, he provided the opportunity to conduct this project and was the backbone for making sure it was a success. Personally, his strength and patience never flagged. Steven – Thank you.

TABLE OF CONTENTS

ACKNOWLEDGMENTS……..iv

LIST OF TABLES…….viii

CHAPTER ONE: Statement of Purpose……9

CHAPTER TWO: Literature Review……...19
Disability in Schizophrenia……...19
The Cost of Schizophrenia……20
Quality of Life and Mortality in Schizophrenia……21
Comorbidity in Schizophrenia……...……21
Course of Illness and Recovery in Schizophrenia…….22
The Limits of Psychopharmacologic Treatment in Schizophrenia……23
Psychosocial Treatment and Psychiatric Rehabilitation in Schizophrenia……25
Social-Learning Programs…….25
The Paul and Lentz Study……..26
Philosophy and Values……..27
Differential Reinforcement……27
Shaping……..28
Associative and Observational Learning……...29
Encouragement and Positive Reinforcement…….30
Token Economy…….30
Level Structure……...31
Expressed Emotion in Schizophrenia…….32
Theories of Expressed Emotion……..32
Expressed Emotion Among Psychiatric Staff…….33
Difficulties Associated with the Development and Maintenance of Psychiatric Rehabilitation Programs……..……34
Training in Psychiatric Rehabilitation……34
Attitudes Toward Treatment…….…..35
Staff Training…….….36
Didactic Staff Training……...37
Interactive Staff Training……38

CHAPTER THREE: Hypotheses……41
Behavioral Differences Between Medical Staff and Clinical Staff…….....41
The Effects of Staff-Training on Staff Behavior…….....42
Staff Performance on the Written and *In Vivo* Assessments……...43
Social-Learning Ideology……....45

CHAPTER FOUR: Method……....47
Sample……....47
Setting…….47
Procedure……....49

Staff Training……....49
Group Assignment……....49
Observational Ratings……...50
Reliability of Observational Ratings…….51
Measures……...52
Data Analysis……54

CHAPTER FIVE: Results……61
Primary Analysis:……61
Exploratory Analysis……72

CHAPTER SIX: Discussion…….74

Footnotes……...91

References……..……...92

Appendices……..105
Appendix A: Staff-Training Powerpoint Presentation……105
Appendix B: Staff-Resident Interaction Fidelity Scale (SRIFS)…….106
Appendix C: Staff-Resident Interaction Fidelity Scale (SRIFS) Scoring…...107
Appendix D: Behavior Management Training Written Exam……117
Appendix E: Staff-Training *In-Vivo* Exam Checklist…….122
Appendix F: Social-Learning Ideology Scale…….123

LIST OF TABLES

Table 1: Behavior Categories from the Staff Resident Chronograph Fidelity Scale (SRIFS)……...46

Table 2: Mean Percent Scores on the SRIFS for Clinical and Medical Staff at Time 1…….61

Table 3: Mean Percent Scores on the SRIFS for Clinical and Medical Staff at Time 3…….62

Table 4: Mean Percent Scores on the SRIFS at Time 2 for Group 1 and Group 2…....63

Table 5: Mean Percent Scores on the SRIFS at Time 1 and Time 3 for All Staff…….65

Table 6: Correlations for the SRIFS Behavioral Categories and Written and *In-Vivo* Test Scores at Time 1……..66

Table 7: Correlations for the SRIFS Behavioral Categories and Written and *In-Vivo* Test Scores at Time 3……..67

Table 8: Correlations for the SRIFS Behavioral Categories and Change Scores……..67

Table 9: Z Scores for the Difference between the Correlation Coefficients of Written Test Scores and In-Vivo Test Scores and the SRIFS Behavior Categories....68

Table 10: Correlations Between the Social-Learning Ideology Scale (SLIS) and Change Scores from the Behavior Categories of the SRIFS…….72

CHAPTER ONE

Statement of Purpose

Overview

This study sought to examine the frequency and quality of staff-patient interactions on an inpatient psychiatric rehabilitation unit. Specifically, this investigation examined the nature and frequency of interactions between patients and psychiatrists, psychologists, psychiatric nurses, social workers, occupational/recreational therapists, and mental health care workers (paraprofessional psychiatric technicians) using a direct observational method of assessment completed with all staff. This study also examined the effects of a mandatory three-phase unit-wide inpatient staff-training program in behavior management. Post-training outcome variables included the degree to which staff were able to 1) learn principles of social-learning theory and behavior therapy, 2) actively demonstrate mastery of the skills during role-plays with staff, 3) apply those principles to the understanding and treatment of individuals with severe and persistent mental illness, and 4) successfully demonstrate those skills while in a real-world treatment setting working with patients.

Setting

Observational assessments took place on a psychiatric inpatient unit, “The Second Chance Program” at The New York Presbyterian Hospital-Weill Medical College of Cornell University, in White Plains, New York. The Second Chance Program was developed as a specialized psychiatric rehabilitation inpatient unit, based on social-learning theory principles, for seriously mentally ill individuals unable to improve in state

hospital settings. The philosophy guiding the program involves an integration of learning-based techniques and skills-training technologies within the context of a positive teaching environment to assist patients in developing adaptive behaviors and skills to ultimately function more effectively in the community. The program utilizes a combination of milieu management, group skills training, and individualized interventions that address patients' behavioral excesses and deficits. The milieu management system involves both a point-based system for determining on- and off-ward privileges, and a token economy system (described in more detail later) that provides frequent and immediate feedback for appropriate and inappropriate behaviors. All of the interventions on the Second Chance Program promote learning through the use of differential reinforcement techniques, with the understanding that therapeutic change is a continuous process consisting of gradual acquisitions of new adaptive behaviors and gradual reduction in expression of maladaptive behaviors (Menditto, 2002; Spaulding, Sullivan, & Poland, 2003). Much of the success of the program, therefore, relies on staff being able to implement specific and complex differential reinforcement procedures. Therefore, all staff were required to undergo extensive and specialized training in social-learning theory and behavior therapy.

Staff-Patient Interactions

Much of the work on staff training in psychiatric rehabilitation has focused on two primary aspects of training 1) staff's reactions and feelings about the quality of the training (i.e., whether or not staff found the training interesting and helpful), and 2) the degree to which staff were able to increase their knowledge as a result of the training

(i.e., learn new and more effective ways of working with patients). These have typically relied on paper-and-pencil measures of improvement from pre- to post-training (Corrigan & McCracken, 1997). However, this approach overlooks a number of important factors. For example, staff self-report measures of training satisfaction fail to take into account factors such as subject expectancy effects and positive biases. Moreover, this approach assumes that increased knowledge about behavior therapy and psychiatric rehabilitation among staff will result in the successful implementation and application of these principles when working in real-world settings with patients. Past research in this area has demonstrated a weak relationship between the two (Hollander & Plutchik, 1972; Patterson, Griffin, & Panyan, 1976; Richman, Riordan, Reiss, Pyles, & Bailey, 1988). Specifically, increased knowledge about principles and techniques of behavioral therapy and psychiatric rehabilitation following staff training does not directly result in the successful application of the skills when staff are working with patients (reviewed in Corrigan & McCracken, 1997). Therefore, this study utilized an assessment strategy that involved direct observational assessments of staff performance. Specifically, assessments were gathered on the unit while staff executed their daily activities.

A total of 90 hours of direct observational assessment was obtained for all staff. The ninety hours were split between three time points (30 hours each). The first 30 hours of observational assessment were conducted at baseline before staff received formal training (i.e., instruction, role-play, and exam). The second 30 hours were conducted after one half of the staff completed training, with the staff observer (non-interactive observer) unaware of which staff had completed the training. The final 30 hours was done after all staff on the unit completed training. Observational data were obtained using a non-

interactive observer that was present on the unit between the hours of 8:00 am and 8:00 pm. The specific role of the non-interactive observer was to observe and record staff behavior while staff conducted their daily activities on the unit. All staff were aware of the non-interactive observer, and were instructed to allow the observer access to all unit interactions (both with patients and with other staff members) and duties.

Staff behaviors were recorded and coded by the non-interactive observer using a modified version of the Staff-Resident Interaction Chronograph (SRIC; Paul, 1988), the Staff-Resident Interaction Fidelity Scale (SRIFS). Like the SRIC, the SRIFS provides detailed information about staff behavior using a time-sampling strategy. Specific staff behaviors are recorded (described in more detail in the Methods section) over 5-minute intervals on a rotating basis for all staff members present on the unit at any one time. A total of 25 separate staff behaviors (both verbal and nonverbal) were evaluated for all staff members at all three time periods. Types of interactions can be categorized into the seven higher-order categories of positive behaviors, negative behaviors, neutral behaviors, therapeutic behaviors, instructional behaviors, non-interactive observing behaviors, and conversations with other staff - paperwork.

Differences Between Professional Disciplines

Due to factors such as differences in educational background, job characteristics, level of burnout, and previous experience with behavioral therapy, one would predict significant differences in the nature and type of staff-patient interactions between the professional disciplines. Typically, psychiatric staff are divided into two types of professional disciplines, nursing staff (registered nurses, licensed practical nurses, and

psychiatric technicians) and clinical staff (social workers, psychologists, and psychiatrists) (Corrigan, 1994; Donat & McKeegan, 1990). Nursing staff are often responsible for the day to day management of living conditions on the unit, whereas clinical staff tend to focus more on psychological/psychosocial therapies and treatment modalities (Corrigan, 1994). Although helpful in differentiating differences in job characteristics and duties, this classification system does not address differences in treatment philosophy and views of mental illness. Previous work examining the training philosophies and treatment ideologies of individuals within the medical community (psychiatrists, psychiatric nurses, and mental health workers) and those within the psychological and social work community, have revealed marked differences in views of mental illness and rehabilitative treatment (Corrigan, 1994; Whitaker, 2002). For example, research has demonstrated that psychiatric staff trained within the medical model (psychiatrists, psychiatric nurses and mental health workers) tend to attribute difficult patient behaviors and acts of aggression to the patient's illness and improper medication doses (Ilkiw-Lavalle & Grenyer, 2003; Read et al., 2004). In contrast, psychologists and social workers have been shown to view the same types of behaviors as being attributed, in part, to contextual (i.e., person-in-situation) and interpersonal factors (Lieberman, 1987; Read et al., 2004; Wilkniss & Silverstein, 2004). Based on these assumptions, this investigation divided staff into two categories, medical staff (psychiatrists, psychiatric nurses and mental health workers) and clinical staff (social workers and psychologists). It was hypothesized that clinical staff, compared to medical staff, would display 1) a greater number of positive and therapeutic-related interactions with patients (e.g., more positive verbal statements, more reflective statements, etc.,

described in greater detail later in the Methods section), and 2) fewer negative verbal and nonverbal behaviors, and fewer instances of observing patients on the unit (and not interacting with them).

Staff Training

Psychiatric rehabilitation programs based on social-learning theory principles have been shown to have a significant impact on the course of illness and outcome of severely mentally ill patients (Liberman, Corrigan, & Schade, 1989; Liberman, Kopelowicz, & Silverstein, 2005; Paul & Lentz, 1977; Spaulding, 1993). However, behavioral and/or social-learning principles are often not utilized in inpatient mental health settings (Corrigan & Buican, 1994; Corrigan & McCracken, 1997; Corrigan, Steiner, McCracken, Blaser, & Barr, 2001; Glynn, 1990). Studies have shown that a lack of knowledge regarding behavior rehabilitation principles among staff is one of the largest barriers to implementing successful psychiatric rehabilitation programs (Corrigan, 1994; Corrigan & McCracken, 1997). Moreover, the majority of staff in inpatient psychiatric settings are trained primarily in medication management and find principles of behavior therapy, social-learning theory, and token economies to be foreign to their professional roles (Morisse, Batra, Hess, Silverman, & Corrigan, 1996; Repucci & Saunder, 1974). Due to a lack of basic knowledge and skills on the government of successful behavioral rehabilitation programs, and a lack of proper training in reinforcement procedures, nursing and mental health worker staff have been found to be highly inconsistent and unpredictable when implementing reinforcement procedures with psychiatric patients (Niemeier, 1983).

The implementation of a comprehensive staff training program that includes instruction on the consistent and timely delivery of reinforcement in response to specific behavioral targets, shaping procedures, and extinction and response-cost techniques for specified maladaptive behaviors is critical to successful behavioral change. Moreover, it is important that training transcend professional disciplines to include all individuals in the treatment milieu. Therefore, training for this project included all staff with patient contact on the unit, including psychiatrists, psychologists, psychiatric nurses, social workers, occupational/recreational therapists, and mental health workers. The training was conducted by a team of two clinical psychology staff (the program director and a second clinical psychologist). Staff were required to attend eight hours of didactic instruction over a four-week period (2 hours per week) regarding social-learning theory principles and procedures, serious mental illness, and psychiatric rehabilitation ideology. Following this didactic instruction, staff participated in role-plays and received feedback on their application of the principles and procedures over a four-week period. Once training was completed, all staff took a written exam based on behavioral and social-learning theory principles. After this, all staff were required to pass an *in vivo* demonstration of the skills and procedures with the training psychologist in a one-to-one setting. All staff were required to demonstrate the procedures until successful mastery of the skills was demonstrated. The number of times needed until mastery of the skills was demonstrated was recorded.

Overall, significant relationships between performance on the written and *in vivo* tests, and level of improvement on the direct observational measure from pre- to post-assessment for all staff members were expected. However, research linking staff training

and improved implementation of behavioral interventions has yielded mixed results. For example, while previous investigations of staff training have suggested that didactic training in behavioral principles increases staff knowledge as assessed by written and verbal tests (Spore, Smyer, & Cohn, 1991), it does not result in the application of appropriate behavioral techniques in the actual work environment (Hollander & Plutchik, 1972; Patterson et al., 1976; Richman et al., 1988). Based on these findings, performance on the *in vivo* assessment is expected be more predictive of staff performance at post-assessment than performance on the written test.

Overall, it was hypothesized that all staff will demonstrate improvement from pre- to post-observational assessment. Because nursing and mental health care staff interact with patients continuously throughout the day, and because their work space is located on the unit with the patients, they are exposed to a greater number of stressors and demands than other staff. Moreover, nursing and mental health care staff are more likely to work early morning and evening/night shifts when staff-patient ratios are lower and/or when greater demands are placed on patients (i.e., activities of daily living) which can often result in more difficult patient behaviors. At post-observational assessment, therefore, it was predicted that there will still be differences in performance on the observational assessment measures, with clinical staff displaying a greater number of therapeutic and positive behaviors compared to medical staff.

Social-Learning Ideology

Previous research has indicated that the attitudes of psychiatric staff may serve as significant barriers to the implementation of behavioral strategies in psychiatric

rehabilitation (Corrigan, Williams, McCracken, Kommana, Edwards, & Brunner, 1998; Corrigan et at., 2001; Paul & Lentz, 1977). In particular, staff who hold negative attitudes about behavioral treatments are less likely to attempt to learn and implement them in psychiatric settings. Reasons for this vary and include adhering to a biological ideology of schizophrenia and serious mental illness, beliefs that behavior therapy is inappropriate, ineffectual, or unethical, and beliefs that patients do not like to participate in behavioral treatments (Corrigan & McCracken, 1997; Corrigan et al., 1998; Corrigan et al., 2001).

In this investigation, social-learning ideology and beliefs about the usefulness of behavioral principles with respect to seriously mentally ill populations was assessed post-training using the Social-learning Ideology Subscale of the Opinions of Mental Illness (OMI) Test (Paul & Lentz, 1977). It was hypothesized that lower levels of social-learning ideology will be associated with lower improvement pre- to post-observational assessment, and lower scores on both the written and *in vivo* assessments.

Summary of the Statement of Purpose

To summarize, the specific aims of the proposed study were:

1) To quantitatively characterize the nature of staff-patient interactions on an inpatient psychiatric rehabilitation unit, with particular attention to differences between medical and clinical staff.
2) To examine the effects of a mandatory training program in behavioral management, consisting of both didactic and interactive components, on staff attitudes, knowledge, and behaviors regarding behavioral treatment.

3) To examine staff characteristics (e.g., education, profession, age, etc.) that are related to outcomes on the assessments of attitudes, knowledge, and performance.

CHAPTER TWO

Literature Review

In setting the stage for this study, several issues will be briefly examined in order to provide a context that highlights the need to improve services as a means to improve outcomes for people with schizophrenia. First, I will discuss the issue of disability in schizophrenia, which will include conceptualizations of schizophrenia as a "mental illness," verses schizophrenia as a set of cognitive and behavioral deficits. This is followed by data on the cost of schizophrenia, quality of life and mortality rates, comorbidity rates, course of illness, limitations of psychopharmological treatments, and recovery rates, all of which highlight the need to improve services for the most seriously ill patients. Following this, I will provide a review of psychiatric rehabilitation in serious mental illness with a focus on behavioral and token economy programs. This will include their history and effectiveness, along with a description of modern-day social-learning systems currently being used. I will also review standard treatments offered in many state hospitals, and data on low levels of staff-patient interactions. After which, I will discuss aspects of expressed emotion and other staff characteristics among mental health care providers and their relationships with outcome. Finally, a review will be provided on effective staff-training models.

Disability in Schizophrenia

Schizophrenia as a Serious Psychiatric Condition. In the psychiatric and mental health community, schizophrenia is typically characterized as a neurobiological (brain) "disorder" or "mental illness" characterized by variable, but significant disruption in

cognitive, emotional, perceptual, and behavioral functioning (Buchanan & Carpenter, 2005). However, recent conceptualizations of schizophrenia have challenged the notion that it is a mental illness, analogous to a physical illness, and instead have emphasized non-medical model, psychosocial alternatives to understanding and treating it (Poland, Von Eckhardt, & Spaulding, 1994; Read, Mosher, & Bentall, 2004; Spaulding et al., 2003). Theories have also suggested that the clinical syndrome of schizophrenia is likely comprised of multiple disordered processes with varying etiologies and pathophysiologies with a final common pathway, and that a possible reconceptualization of the nosology of schizophrenia may be necessary (Buchanan & Carpenter, 2005; Poland et al., 1994). Although definitions and conceptualizations of schizophrenia remain quite controversial, few would argue that it is a serious condition that often results in substantial impairment in adaptive functioning. For the purposes of this investigation, the term schizophrenia will be used in its traditional sense. However, as is the focus of the current study, psychosocial and contextual factors in the expression and treatment of "schizophrenia" will be a major emphasis.

The Cost of Schizophrenia. Schizophrenia has a lifetime prevalence rate of approximately 1% among individuals 18 years and older, with a worldwide incidence exceeding 20 million individuals (Rupp & Keith, 1993). Moreover, the prevalence rate increases to approximately 5% when schizophrenia spectrum disorders (i.e., schizoaffective disorder, delusional disorder, and schizoid personality disorder) are considered (Buchanan & Carpenter, 2005). Estimates of the direct and indirect costs of schizophrenia in the United States have been estimated to be at 33 billion dollars (Rice and Miller, 1996). Moreover, 75% of all mental health expenditures and over 40% of all

Medicaid reimbursements are associated with the disorder (Martin & Miller, 1998). This high societal economic burden behooves researchers and clinicians to find ways to maximally implement evidenced-based rehabilitation interventions such as the rehabilitation program that serves as the context for the proposed study.

Quality of Life and Mortality in Schizophrenia. A number of studies have demonstrated that the quality of life among individuals with schizophrenia is significantly lower compared to the general population (Lehman, Ward, & Linn, 1982; Lauriello et al., 2005; Silverstein, 2000). Rupp & Keith (1993) reported that as many as 10% of disabled persons in the United States have schizophrenia. It has been estimated that 15% to 45% of homeless Americans are thought to have schizophrenia (Buchanan & Carpenter, 2005). Competitive employment rates for individuals with schizophrenia are estimated to be between 10% to 20% (Marwaha & Johnson, 2004), and employment dropout rates have exceeded 40% (Lauriello et al., 2005). Additionally, the life expectancy for individuals with schizophrenia has been estimated to be approximately 20% below the general population (Lauriello et al., 2005). Individuals with schizophrenia are at greater risk for suicide, with suicide attempt rates between 20% to 50% (Kirkpatrick & Tek, 2005), and actual suicide rates falling between 10% to 13 % (Kirkpatrick & Tek, 2005; Buchanan & Carpenter, 2005).

Comrobidity in Schizophrenia. Comorbidity rates for other psychiatric disorders among people with schizophrenia are high, and result in poorer prognosis and greater difficulty adhering to and benefiting from treatment interventions (Green, Canuso, Brenner, & Wojcik, 2003). In particular, substance abuse is particularly prevalent among schizophrenia individuals (Kirkpatrick & Tek, 2005), and have been associated with

poorer outcome (Green et al., 2003). Prevalence rates for smoking have been reported to be as high as 90% (McCreadie et al., 2002). Moreover, as many as 40% of patients are reported to have histories of alcohol abuse, and over 16% reported abusing substances other than alcohol (McCreadie et al., 2002). Poorer overall general health has also been associated with schizophrenia, including such comorbid health conditions as obesity, diabetes, cardiovascular disease, HIV, and rheumatoid arthritis (Kirkpatrick & Tek, 2005; Sokal et al., 2004). Recent estimates indicate that people with schizophrenia are 1.5 times more likely to die from natural causes than that found in the general population (Kirkpatrick & Tek, 2005).

The high rates of comorbidity add to the complexity of schizophrenia and make the delivery of effective and tailored treatment interventions difficult. Therefore, rehabilitation programs are needed that incorporate a broader framework of psychosocial and contextual factors, and aim at treating multiple areas of maladaptive functioning (Spaulding et al., 2003).

Course of Illness and Recovery in Schizophrenia. While substantial recovery from schizophrenia is possible in more cases than was previously thought, it is found in less than half of patients. Moreover, approximately 50% to 70% of patients diagnosed with schizophrenia do not fully recover and instead are characterized by a chronic and remitting course of illness (Silverstein, 2000). While some studies have reported higher recovery rates, such effects appear to be limited to communities with extensive rehabilitation services (Harding, Brooks, Ashikaga, Strauss, & Breier, 1987), and occur only after long periods of time (e.g., >20 years). Recovery after periods of over 10 years, under typical conditions remain rare (Lauronen et al., 2005). Among first-episode

schizophrenia individuals, research has suggested that as the number of psychotic episodes increases, the time to recover also increases and functional impairment progressively deteriorates (Robinson, Woerner, McMeniman, Medelowitz, & Bilder, 2004). Finding ways to reverse this process, and to promote adaptive functioning is therefore a critical task in the study of schizophrenia. Such success has been demonstrated with social-learning based rehabilitation programs (Menditto, 2002; Spaulding et al., 2003). These, however, are underutilized and often not implemented correctly due to internal and external administrative barriers (Franco & Kelly, 1994).

The Limits of Psychopharmacologic Treatment in Schizophrenia. Although pharmacological treatments have been shown to be effective at reducing some psychotic symptoms, their benefit is incomplete, and many patients have suboptimal responses (Dickerson, Dixon, Lehman, 2005). Even in the best cases, medication treatment alone can not address the cognitive and skills deficits inherent in schizophrenia individuals due to the social and cognitive consequences of the disorder. This is important because investigations have suggested that for many patients, cognitive and living skills have been demonstrated to be stable over time (Spaulding et al., 1994), and are a stronger predictor of treatment response and level of functioning than the degree of psychotic symptomatology (Green, Kern, Braff, & Mintz, 2000; Schretlen et al., 2000; Silverstein, Schenkel, Valone, & Nuernberger, 1998). Moreover, studies have demonstrated that the likelihood of successful discharge from a hospital and successful outpatient aftercare was significantly predicted by higher levels of social and adaptive living skills (Kopelowicz, Wallace, Zarate, 1998; Paul & Lentz, 1977).

Reviews of the literature on the effects of antipsychotic medication in schizophrenia have demonstrated some improvement in cognitive functioning for some of the second-generation antipsychotics, however, effect sizes for many of the studies were small, and 40% of the studies reviewed did not show significant findings (Harvey & Keefe, 2001; Meltzer & McGurk, 1999). Moreover, many investigations were flawed by methodological problems such as uneven medication dosing (e.g., low but effective doses of new drugs being compared to higher than normal doses of first generation drugs such as haloperidol) and difficulties differentiating potential cognition enhancing drug effects from effects related to the elimination of cognition-interfering side effects (e.g., sedation, akithesia, rigidity) of older drugs (Carpenter & Gold, 2002; Harvey & Keefe, 2001).

The largest difficulty with medication studies aimed at improving cognition and living skills is that they have failed to demonstrate more generalized improvements in adaptive functioning (Silverstein & Wilkniss, 2004). For example, Velligan et al. (2003) recently reported results demonstrating that quetiapine (Seroquel) was effective at improving cognition on laboratory tasks, however, there were no significant effects on living skills or adaptive functioning (i.e., real-world functioning), even after six months of treatment (Velligan et al., 2003). Similar findings were reported by Bellack et al. (2004), who reported that neither clozapine nor risperidone improved interpersonal functioning or social cognition in individuals with schizophrenia even after symptom reduction. Results from these investigations and a number of others indicate that medication alone is insufficient for improvement in real-world adaptive functioning among individuals with schizophrenia (Keefe et al., 2003; Motjabi et al., 1998; Tuominen, Tiihonen, Walbeck, 2005 Tuunainen, Wahlbeck, Gilbody, 2002).

Psychosocial Treatment and Psychiatric Rehabilitation in Schizophrenia

The consequences of schizophrenia with respect to health care costs, overall cost to society, effects on individuals with the disorder and their family members, and impact on the mental health community and mental health services are substantial (Knapp, Mangalore, & Simon, 2004). In light of the complexity and significant variability of schizophrenia, many have argued that treatments and rehabilitative efforts should consider multiple factors inherent to the disorder, with greater emphasis on psychosocial and contextual factors. Moreover, it has been suggested that these should be considered within an overall multisystemic interdisciplinary approach to intervention and treatment (Buchanan & Carpenter, 2005; Lauriello, Bustillo, & Keith, 2005; Lieberman et al., 2005; Spaulding, Johnson, & Coursey, 2001; Spaulding et al., 2003). Effective psychiatric rehabilitation programs are needed in order for schizophrenia patients to learn the skills necessary to function effectively in the community. The overall goal of these programs is to directly improve the psychosocial functioning of individuals with serious and persistent mental illness.

Social-Learning Programs

Psychiatric treatment programs that employ social-learning principles and procedures, commonly referred to as social-learning programs (SLPs)[1], have been shown to be highly effective in treating individuals with serious and persistent mental illness (Glynn & Mueser, 1986, 1992; Menditto, 2002; Paul, Stuve, & Menditto, 1997). SLPs have been associated with the acquisition of new and more effective coping skills, a

reduction of bizarre and inappropriate behaviors, improved social functioning, improvements in self-care and other activities of daily living, and reduced rates of relapse and/or hospitalization (Glynn & Mueser, 1986; Liberman et al., 1986, 2005). SLPs emphasize extensive and focused skills training within the context of a comprehensive treatment program that utilizes applied techniques in differential reinforcement to promote the development, maintenance, and generalization of adaptive behaviors and skills (Menditto, 2002; Paul, Stuve, & Menditto, 1997, Paul & Lentz, 1977; Spaulding et al., 2003).

The 1977 Paul and Lentz Study. The effectiveness of the SLP model in inpatient settings with seriously mentally ill populations was first demonstrated by Paul and Lentz's (1977) landmark 7-year clinical outcome study which compared two comprehensive psychiatric rehabilitation programs (i.e., an SLP and a milieu therapy program) and a standard inpatient care setting. The SLP, based on operant and social-learning procedures, was applied during all waking hours by all staff on the unit. The SLP utilized a highly specific token economy system whereby immediate feedback was given for targeted appropriate and inappropriate behaviors on the ward. The milieu program emphasized patient involvement and promoted empowerment. Patients were assigned to living groups that stimulated social interaction, group activity, and patient involvement. The standard inpatient care setting did not incorporate any type of systematic psychosocial rehabilitation; instead it was characterized by standard custodial care. When all three treatment groups were compared, the SLP was consistently more effective than the other two programs on a number of outcome variables including a higher discharge rate, fewer instances of inappropriate and/or aggressive behavior, an

increase in appropriate behaviors, and a reduction in symptomatology. Moreover, patients on the SLP required significantly less medication compared to the other two programs.

Philosophy and Values. SLPs adopt an approach that views all persons with serious psychiatric disorders as capable individuals who are able to learn new behaviors and skills and have the ability to function effectively once living in the community (Menditto, 2002; Paul et al., 1997). Patients (often referred to as clients or residents) are viewed as individuals (rather than “schizophrenics” or “sick people”) that are in need of support and skills training. In an effort to help patients view themselves as able persons who have the ability learn new skills and regain control over their lives, the individual’s capabilities are emphasized, and not the disorder or maladaptive behaviors (Glynn & Mueser, 1986; Menditto, 2002).

In SLPs, staff of all disciplines and levels are thoroughly trained in the principles and procedures guiding the program. This includes the belief that all interactions with patients, regardless of how routine or seemingly insignificant, have the potential to alter client functioning (either positively or negatively). Staff adopt the role of coach and teacher to aid patients in the development of adaptive behaviors. Through this approach, patients learn new skills, feel more in control of their lives, and develop hope that they will ultimately be able to return to the community and function successfully.

Differential Reinforcement. Differential reinforcement techniques form the basis for many of the procedures used in SLPs. They consist of the timely and consistent delivery of verbal praise, positive social attention, and material/goods as reinforcement for adaptive behaviors, while applying extinction and response-cost techniques for bizarre, aggressive, and/or inappropriate behaviors (Paul & Lentz, 1977; Menditto, 2002).

These techniques are based on the learning principle commonly known as the *law of effect*, which states that responses to a situation which are followed by a reward will be strengthened and/or will become habitual responses to that situation. This philosophy is commonly applied through the use of positive reinforcement (i.e., providing immediate positive social and/or material reinforcement for desired behavior), negative reinforcement (i.e., removing the presence of an aversive or negative stimulus in response to a desired behavior), response-cost (i.e., the removal of positive reinforcers for undesirable behavior), and extinction (i.e., the absence of any type of reinforcement and/or consequence following undesirable behavior in order to reduce its frequency) (Glynn & Mueser, 1986; Paul & Lentz, 1977).

Shaping. Shaping procedures involve the reinforcement of specified successive approximations toward a final behavior or skill (Glynn & Mueser, 1986; Paul & Lentz, 1977). Within the context of a SLP, shaping procedures are typically used to augment skills training through reinforcing specified behaviors across a wide range of functioning areas (Menditto, 2002). Performance criteria are progressively increased and/or made more challenging as patients successfully meet the individual targets and progress toward the final behavior. The majority of work in this area has focused on shaping procedures to improve attention span among cognitively impaired individuals (Menditto, Baldwin, O'Neal, & Beck, 1991; Silverstein, Hitzel, & Schenkel, 1988; Silverstein, Menditto, & Stuve, 2001; Spaulding, Storms, Goodrich, & Sullivan, 1986). However, shaping procedures have also been used to develop a number of other adaptive behaviors including appropriate social behaviors (e.g., starting a friendly conversation with a peer), and activities of daily living (e.g., keeping one's room clean), as well as for reducing high

rates of bizarre and/or aggressive behaviors (Menditto, 2002; Menditto et al,. 1991; Spaulding et al., 1986).

Associative and Observational Learning. Associative learning procedures are a large part of SLPs, and are based on the learning principle of *the law of association by contiguity*, which states that learning occurs when two stimuli are paired in a person's experience. This concept originated from Aristotle's "law of association by contiguity," which states "if a person experiences two environmental events (stimuli) at the same time or one right after the other (contiguously), those events will become associated in the person's mind, such that the thought of one will, in the future, tend to elicit the thought of the other" (Gray, 1999, p. 104). If a target behavior is consistently paired with a positive reinforcer, the target behavior comes to be associated with the reinforcer. This allows for new reinforcers to be established through the pairing a second stimulus with an existing reinforcer. The technique is also useful for the generalization of learned behavior through pairing material reinforcers (i.e., goods) with social reinforcers (i.e., praise). With this technique, the social reinforcers gain greater value and allow for the former to be faded and eventually eliminated (Menditto, 2002).

Principles of observational learning are also important in SLPs, and are applied in a number of different ways. For example, staff serve as important role-models by demonstrating adaptive social behaviors toward one another and toward patients. Because many of the interactions between patients and staff occur publicly, and because these often involve positive reinforcement, they benefit all patients (not just those patients who are directly involved), and enable them to continuously see the connection between adaptive behavior and positive experience (Menditto, 2002).

Encouragement and Positive Reinforcement. For SLPs to work effectively, it is critical that patients be able to trust staff, and must feel comfortable and safe in their environment. As such, it is critical that SLPs are run in a consistent and reliable fashion. To maintain consistency, SLPs rely heavily on staff's ability to deliver learning-based techniques and procedures in a compassionate, sincere, and genuine, yet systematic manner. This is in marked contrast to more mainstream inpatient units, where often times rules can be unpredictable and dependent upon the changing moods of staff (Menditto, 2002). Recent work has suggested that as psychiatric patients feel more comfortable and trusting of staff, they are more likely to attempt to learn new behaviors and skills (Menditto, 2002).

Token Economy. Token economies are an important component of successful social-learning programs and are often used in conjunction with skills training and shaping procedures. Based on contingency management principles, token economy programs grew out of early social-learning theories and have proven to be highly effective in promoting skill acquisition and adaptive behaviors among seriously mentally ill populations (Liberman et al., 2005; Morisse et al., 1996; Paul & Lentz, 1977).

Token economies rely on the use of contingent reinforcement procedures, whereby patients receive rewards (e.g., tokens, points, or credits) for performing a variety of adaptive behaviors, including participating in classes and groups, and for meeting clearly specified adaptive behavioral targets. Patients develop skills in decision making and self-determination as they decide which activities they wish to earn tokens for and how they want to spend them (Menditto, 2002). Patients cash in their tokens (i.e., at token stores or other specified token exchange locations on the unit) to purchase goods, or save

them up to make “big-ticket” purchases such as a jewelry or radio equipment (Liberman et al., 2005; Menditto, 2002). This approach can be viewed as a way of “normalizing” a psychiatric inpatient setting and mimicking the real-world through the use of money as a means to meet instrumental needs (Liberman et al., 2005; Menditto, 2002). Token economy systems help patients with severe disorganization and/or cognitive impairments function at their highest level by providing a consistent and simplified environment with immediate feedback for positive and negative behaviors. An important feature of the token economy system is the high level of reinforcement, which ensures that even the lowest functioning patients, who are often too impaired to benefit from more mainstream treatment modalities, are motivated to meet their individual behavioral targets. Moreover, as patients progress through the system and their behavior begins to approach community standards, external reinforcers are used less and social and internal controls are relied upon more (Silverstein et al., 2005).

Level Structure. Level systems (sometimes referred to as point systems) are milieu management systems that rely on a point structure to track patient behavior and implement on- and off-ward privileges. Patients receive points for meeting specified behavioral targets (e.g., getting up on time, showering, making it to group on time, etc.), which are calculated on a scheduled basis (i.e., daily, weekly, monthly). Based on a functional assessment of the patient’s current functioning, specified performance targets are implemented for each patient. Based on the number of points earned each week, patients are assigned a particular level in the system. Patients are required to meet weekly performance targets at each step level to be promoted to the next level. As patients

progress to higher levels, they receive increased privileges, and reinforcement of desirable behavior moves from more immediate to delayed reinforcement.

For example, in the Second Chance Program noted earlier (and described in more detail in the Methods section below), patients who have progressed to the highest level in the system no longer receive tokens immediately upon completion of a target behavior. Rather, these patients accumulate credits for appropriate behaviors (in lieu of tokens) which can be cashed in at the token store the following week, with the number of credits being equivalent to the number of tokens they would have earned on a daily basis during the past week (like a paycheck). Thus, later stages of the level system approximate experiences patients will encounter in the community (i.e., delayed reinforcement).

Expressed Emotion in Schizophrenia

Theories of Expressed Emotion. Expressed emotion (EE) is a measure of the emotional environment in which psychiatric patients live. Traditionally applied to the families of patients with mental illness, EE is a measure of the intensity and frequency of familial criticisms, hostility, and emotional overinvolvement regarding the patient, and has consistently been associated with relapse among individuals with schizophrenia spectrum disorders (Butzlaff & Hooley, 1998). High levels of EE among family members have been hypothesized to be associated with the belief that unpleasant symptoms and behaviors are under the volitional control of the patient (Moore, Kuipers, & Ball, 1992). Moreover, high EE family members are thought to hold the belief that a lack of control and effort on the part of the patient was the cause of their disorder (Snyder et al., 1995). Theories also suggest that family members who exhibit high EE, and in particular high

levels of criticism, do so in an attempt to exert control over the individual with schizophrenia (Greenley, 1986; Hooley & Gotlib, 2000).

Expressed Emotion among Psychiatric Staff. A number of investigations have demonstrated increased levels of EE among psychiatric staff (Ball, Mooore, & Kuipers, 1992; Moore et al., 1992). This is not surprising, as there are a number of similarities between family members of individuals with schizophrenia and psychiatric staff working in long-term care settings. Both staff and family members spend extended periods of time with patients and experience similar responsibilities and stressors from patients such as verbal and physical abuse, withdrawal and/or reluctance in complying with treatment plans, and declines in functioning (Moore et al., 1992; Kuipers & Moore, 1995). Moreover, like high EE family members, psychiatric staff have been shown to be just as likely to blame patients for not being able to overcome their illness, and to attribute responsibility for unpleasant symptoms and behaviors to the patient (Snyder et al., 1995). Moore et al. (1992) reported that high EE staff tended to attribute illness causes to personality characteristics of patients, rather than to external factors. Similarly, Snyder et al. (1995), reported that high EE staff had a tendency to attribute symptoms and cause of illness to internal factors such as genetic and chemical sources, whereas low EE staff had a tendency attribute the same behaviors to factors external and uncontrollable to the patients such as external pressures, unhappiness, or developmental experiences. Like in family members, high levels of hostility and criticism among staff may be associated with attempts to control patients and/or exert force patients to comply with treatment expectations (Bell et al., 1992; Moore & Kuipers, 1992).

Considerably less research has been done examining the relationship between EE among psychiatric staff and clinical outcome. Among the work that has been done thus far, Snyder et al. (1995) found that psychiatric patients living in group homes characterized predominantly by high EE staff were more likely to exhibit elevated levels of hostility and paranoia than patients living in group homes characterized by low EE staff. Similarly Ball et al. (1992) reported that patients living in predominantly high EE group homes were more likely to be discharged for bad and/or negative behaviors compared to patients living in low EE environments. Moore et al. (1992) reported a significant relationship between high EE among psychiatric staff and increased incidents of bizarre behavior. High EE among psychiatric staff has also been associated with internalizing behaviors among patients. For example, Heinssen, Hooley, Minarik, Israel, & Fenton (submitted) reported a significant relationship between high EE among psychiatric staff and increased inactive and withdrawn behaviors in patients.

Difficulties Associated with the Development and Maintenance of Psychiatric Rehabilitation Programs

Training in Psychiatric Rehabilitation. Psychiatric staff who work with seriously mentally ill populations often lack the proper training and knowledge needed to implement effective psychosocial interventions. Psychiatric staff, across a number of professional disciplines and levels of educational training, have reported that they believe that they lack the necessary knowledge and skills to work effectively with seriously mentally ill populations (reviewed in Corrigan & McCracken, 1997). Moreover, unlike other medical disciplines, in psychiatry there is an inverse relationship between the

degree of illness severity and the level of training among nursing and mental health care staff, with the least trained staff often working with the most seriously mentally ill populations (Mechanic & Aiken, 1987). A lack of training in serious mental illness is also common among professionals in the field (e.g., psychologists and psychiatrists) due to educational and training practices that emphasize the treatment of more mainstream forms of psychopathology (i.e., anxiety, depression, and personality disorders) and/or treatment modalities that focus on private practice and psychodynamic models of intervention (Davis, 1985; Davis, Rawana, & Capponi, 1989; Wasow, 1986).

Attitudes toward Treatment. In addition to inadequate training, a common difficulty with the implementation of many psychiatric rehabilitation programs, and in particular SLPs, is that many of the staff differ in their view of what constitutes treatment. It is not unusual for psychiatrists to conceptualize treatment from a “medical model” ideology in which psychopharmacological treatments predominate, and for nurses to view their role as split between dispensing medications and otherwise acting as a support for the patient within a largely custodial or parental model. Additionally, other factors such as beliefs among staff that social-learning programs and/behavioral therapy is irrelevant, inflexible and hostile, and reliance on a biological model of mental illness, undermine the acceptance and application of social-learning theory principles (reviewed in Corrigan & McCracken, 1997).

Although there is an increasing awareness among the psychiatric community of the importance and utility of psychosocial interventions for individuals with serious mental illness, the implementation of these treatments are often limited and only occur during specific times during the day. For example, therapeutic treatment might occur only

when medications are given out on the unit, or during designated group times. Moreover, it is rare for program staff to conceptualize the most critical aspects of treatment in terms of the moment-to-moment interactions that occur throughout the day between patients and staff (the hallmark of SLPs). For a SLP to work effectively, every staff member must be viewed as an important facilitator of the process of change, hence the common title given to staff in SLPs, “behavior-change agents” (Silverstein et al., 2005).

Staff Training

Staff training is essential for the success of any psychiatric rehabilitation program. However, it is critical in SLPs where the application of highly specific and complex differential reinforcement techniques are relied upon and integrated into all aspects of treatment. The training of mental health staff on the principles and application of social-learning theory, and in particular, the successful application of these principles with seriously mentally ill individuals, is a complex but not unachievable endeavor. Training should involve a multidimensional approach that incorporates educational and organizational psychological principles (Corrigan & McCracken, 1997). Kirkpatrick (1976) identified four primary targets of staff training methods that incorporate both principles: 1) the reactions of staff to the training; 2) the extent to which staff are able to learn new and valuable information as a result of the training; 3) the extent to which staff are able to implement newly learned skills when working in real-world settings; demonstrating actual change in work behavior; and 4) the degree to which changes in staff behavior lead to better outcomes among patients. The first two are typical targets of

didactic (i.e., educational) training, while the second two are often assessed in research on principles of interactive and hands-on training (inherent in organizational approaches).

Didactic Staff Training. Lecture and classroom-based training has been the dominant approach for mental health staff in psychiatric rehabilitation. This type of training relies heavily on formal instruction to facilitate the acquisition of knowledge and skills. Studies of didactic staff training have revealed that classroom-based instruction is associated with increases in knowledge of psychiatric rehabilitation after training (Corrigan & McCracken, 1997). Moreover, increased knowledge of social-learning theory and other rehabilitation strategies among psychiatric staff has been associated with fewer difficulties developing effective treatment programs, greater familiarity with treatment guidelines and procedures, increased knowledge of common treatment terminology, and a reduced prejudice against social-learning and behavioral approaches to treatment *(*Corrigan, Kwartarani, Pramana, 1992; Corrigan, McCracken, Kommana, Edwards, & Simpatico, 1996).

Although didactic training is a necessary ingredient for the implementation of effective psychiatric rehabilitation programs, research examining the long-term utility of didactic approaches has yielded mixed results (reviewed in Corrigan & McCracken, 1997). For example, many staff view training initiatives as burdensome and of little relevance or value to their day to day activities and professional responsibilities. As such, education and training programs often result in high drop-out rates among staff, with numbers reported to be as high as 50% (Liberman, Nuechterlein, & Wallace, 1982; Rogers, Cohen, Danley, Hutchinson, & Anthony, 1986). In addition, once back in “real-world” work environments, many line-level staff (staff involved with the day-to-day care

of patients) fail to implement the strategies and skills they learned, or when used, implement them incorrectly (Corrigan & McCracken, 1997). For example, in a study that examined the utility of teaching staff to use the UCLA psychoeducational modules, following the training, only 11% reported using the techniques in their day-to-day practice (Corrigan, MacKain, & Liberman, 1994; Wallace, Liberman, MacKain, Blackwell, & Eckman, 1992).

Failure to implement classroom-based knowledge and skills is particularly pertinent for behavioral interventions, as they are significantly more complex and require training and application strategies that extend above and beyond more typical psychiatric treatment modalities. Additionally, many social-learning and behavioral therapy strategies are presented in academic "jargon" based on learning theory and social psychology. This format is often unintelligible to most line-level staff, and makes incorporating these strategies that much more difficult to accomplish (Corrigan & McCracken, 1997).

Interactive/Hands-On Staff Training. To avoid the limitations and difficulties of training formats that rely solely on academic instruction, Corrigan & McCracken (1997) and Jones et al. (2001) suggested that training approaches need to expand beyond didactic training models to incorporate various types of interactive and hands-on training. Moreover, staff training should follow the same social-learning procedures used when working with and training patients, such as modeling appropriate behaviors, coaching on the acquisition and execution of social-learning theory principles and procedures, participation in role-plays (including role-plays that involve training staff-staff, staff-staff, and staff-patient), and constant reinforcement and feedback. In addition, training

should take place within the treatment setting, so newly learned skills and techniques can be applied directly with patients. This provides consistency within the treatment program and a level playing field for new techniques to be implemented (Corrigan & McCracken. 1999).

Paul & Lentz (1977) and Paul, McInnis, & Mariotto (1973) were the first to demonstrate the utility of this approach through systematic investigation. As part of their 1977 psychosocial treatment outcome study, which compared a social-learning program and a milieu therapy program, two types of approaches to staff training were directly compared. The first was described as a “sequential/professional mode” which consisted of didactic training (referred to as “academic training”) followed by on-the-job clinical training on social-learning techniques by clinical staff. The second group received an “integrated/technical mode” of training. This was characterized by abbreviated academic instruction by professional staff that was integrated with on-the-job observation of ongoing programs, staff, and patients, followed by on-the-job training with clinical change agents (staff responsible for the implementation of differential reinforcement procedures) actively working on the unit. Post-training observational data of staff-patient interactions using the SRIC indicated that staff trained within the integrated/technical training mode were more accurate at implementing program procedures compared to staff trained within the sequential/professional training modality.

A more recent investigation by Jones et al. (2001), examining the effects of a training program on social-learning procedures to paraprofessionals working on a forensic psychiatric inpatient unit reported similar results. Specifically, staff in this investigation were trained using the integrated/technical method (i.e., academic

instruction coupled with in-vivo training in SLP principles and techniques). Direct observational assessments of staff-patient interactions were gathered (using the SRIC) at baseline, before staff training, and again at post-training, after the implementation of a unit wide social-learning inpatient program. Results revealed that, at post-training, staff were significantly more interactive with patients and displayed a greater number of social-learning techniques compared to before the training began.

CHAPTER THREE

Hypotheses

This study tested four main hypotheses about the nature and frequency of staff-patient interactions and the effects of a staff-training program on staff behavior. Hypotheses regarding baseline differences between professional disciplines (psychiatrists, psychologists, social workers, occupational therapists, nurses, and mental health workers) in the nature of their behavior toward patients are presented first. Second, hypotheses regarding the effects of the staff-training program on staff behavior (across disciplines), as assessed by direct staff-patient observational data, pre- to post-training, are presented. Next, hypotheses regarding staff performance on the written test and the *in vivo* assessment are described. Finally, hypotheses about the relationship between social learning ideology and post-training improvement in interactions with patients are stated.

Hypothesis 1 [RE: Behavioral Differences Between Medical staff and Clinical Staff on the Unit]:

Hypothesis 1a. At baseline, clinical staff (psychologists, social workers, and occupational/recreational therapists), relative to medical staff (psychiatrists, psychiatric nurses, and mental health workers), would display a greater number of positive and therapeutic behaviors, and fewer negative and non-interactive (observing staff on the unit) behaviors. There would be no differences between medical staff and clinical staff in the number of neutral or instructional behaviors, or in the amount of paperwork or staff-to-staff conversations. Specific behaviors included in each of the seven categories (e.g.,

positive, neutral, therapeutic, negative, and non-interactive/observing behaviors, paperwork, and staff-to-staff conversations) can be found in Table 1 below.

Hypothesis 1b. At time 3, Clinical staff, relative to medical staff, would continue to display the same pattern of differences.

Rationale for Hypothesis 1:

Rationale for Hypothesis 1a. Psychiatrists and nurses, trained within a medical model (to varying degrees), have traditionally viewed mental illness as stemming from biological factors and have de-emphasized psychosocial and/or contextual factors in its etiology and treatment (Kutchins & Kirk, 1997; Leff, 2001). This has resulted in differences in conceptualizations of mental illness, training philosophy (i.e., medical model verses psychosocial), and on-the-job responsibilities (i.e., custodial care/medication management verses therapy-based treatments) between medical and clinical staff.

Rationale for Hypothesis 1b. Due to the extent of the differences (noted in 1a) in training and philosophy between medical and clinical staff, differences between the two groups were hypothesized to remain after training. While training was hypothesized to improve functioning in both groups (discussed in more detail under hypothesis 2), the magnitude of these differences was hypothesized to be strong enough to persist to post-training.

Hypothesis 2 [RE: The Effects of Staff-Training on Staff Behavior]:

Hypothesis 2a. At time 2, staff who have completed training (group 1), relative to those who did not (group 2), would demonstrate higher levels of positive and therapeutic

behaviors. Staff who have completed training would also display fewer negative and non-interactive behaviors. There would be no differences between the groups in the amount of neutral, instructional, or paperwork and staff-to-staff conversations.

Hypothesis 2b. At time 3, after all staff have completed training, there would be no differences between the first group that completed training (group 1) and the second group (group 2) on any of the behavioral variables.

Rationale for Hypothesis 2:

Rationale for Hypothesis 2a. This hypothesis is supported by previous work in the area of staff training and psychiatric rehabilitation which found an overall increase in staff-patient interactions, with a greater incidence of positive and therapeutic staff behaviors following staff training (Jones et al., 2001). Additionally, training in this study emphasized increasing staff-patient interactions and decreasing negative and non-interactive behaviors.

Rationale for Hypothesis 2b. Staff in both groups (group 1 and group 2) would have completed training and any differences between the groups at time 2 should not remain at time 3.

Hypothesis 3 [RE: Staff Performance on the Written and In Vivo Assessments and Relationships with Post-Training Staff Behavior]:

Hypothesis 3a. At time 3, after all staff have completed didactic training, better performance on both the written and *in vivo* assessments would be associated with increased change in positive and therapeutic staff behaviors (from pre- to post-training), and decreased negative and non-interactive/observational behaviors (from pre- to post-

training). Performance on the written and *in vivo* assessments would be unrelated to the amount of neutral, instructional, or paperwork and staff-to-staff conversations.

Hypothesis 3b. It was hypothesized that performance on the *in vivo* assessment would be more predictive of staff behavior on the unit at post-assessment (e.g., higher scores would be associated with more positive and therapeutic behaviors and fewer negative non-interactive/observational behaviors), than performance on the written test.

Rationale for Hypothesis 3:

Rationale for Hypothesis 3a. The training program emphasizes the significance of all staff-patient interactions as part of the therapy process, and not just those within the context of therapeutic groups, classes, or individual sessions. The importance of frequent daily interactions, as well as consistent and immediate reinforcement and feedback is stressed. Therefore, staff that acquired the knowledge and skills taught in the training program (as assessed by the written and *in vivo* measures) would show improvements in their interactions with patients.

Rationale for Hypothesis 3b. The *in vivo* assessment, which included feedback from the trainer and opportunities for mastery, followed the written test and therefore can be seen as helping to remedy deficiencies in knowledge and behavior prior to the final assessment period. In addition, the content of the *in vivo* assessment was closer to what was assessed for this study (i.e., actual staff behavior) than the written test.

Hypothesis 4 [RE: Social-Learning Ideology, Performance on the Written and In-Vivo Assessments, and Post-Training staff Behavior]:

Hypothesis 4. It was hypothesized that lower levels of social-learning ideology, as measured by the Social-learning Ideology Subscale (SLIS) of the OMI (Paul & Lentz, 1977) would be associated with reduced improvement in positive, therapeutic, negative, and non-interactive behaviors pre- to post-observational assessment (from baseline to time 3). There would be no significant relationships between Social-learning Ideology Subscale score and the amount of neutral, instructional, or paperwork and staff-to-staff conversations.

Rationale for Hypothesis 4:

Rationale for Hypothesis 4. As noted earlier in Chapter 1 and 2, past research has demonstrated a strong relationship between negative beliefs toward behavioral treatments and SLPs, and a reluctance among mental health care staff to implement these strategies in psychiatric rehabilitation programs (Corrigan & McCracken, 1997). There is little theoretical relevance for, as well as no past research, demonstrating relationships between social-learning ideology and the amount of neutral, instructional, or paperwork and staff-to-staff conversations.

Table 1. Specific Behaviors from the Staff-Resident Interaction Chronograph Fidelity Scale (SRIFS) Included in Each of the Seven Categories

Positive Behaviors	**Negative Behaviors**	**Neutral Behaviors**	**Therapeutic Behaviors**	**Instructional Behaviors**	**Non-Interactive /Observing**	**Paperwork/ Staff-to-Staff Conversations**
Positive Verbal	Negative Verbal	Neutral Verbal	Validate/ Reflect	Instruct/ Give Information	Sitting on Unit Observing	Doing Paperwork
Positive Nonverbal	Negative Nonverbal		State Reality	Activity Demand		Conversations with Other Staff
Positive Question	Negative Question		Suggest Alternative	Doing For		
Positive Group Reference	Negative Group Reference		Elicit Alternative			
	High EE		Doing With			
	Physical Force		Ignore as Differential Reinforcement or as Extinction			
	Postpone					
	Ignore					

CHAPTER FOUR

Method

Sample

The sample in this study consisted of 32 staff (15 males and 17 females) working on a psychiatric rehabilitation inpatient unit (the Second Chance Program) at New York Presbyterian Hospital-Cornell Medical Center, Westchester Division. The group was comprised of psychiatrists (n=4), psychologists (n=2), social workers (n=3), a social work intern (n=1), nurses (n=7), an occupational/recreational therapist (n=1), a unit manager (with undergraduate training in nursing and graduate training in psychology) (n=1), and mental health workers/paraprofessionals (n=13). The mean age of the sample was 41.29 years (SD=9.06), with an average education of 15.60 years (SD=3.68). Staff had been working at the hospital for an average of 7.83 years (SD=9.19). The racial breakdown of the sample was Caucasian (n=17), African American (n=10), Hispanic (n=4), and Asian (n=1).

All participants were divided into two groups, medical staff and clinical staff. The psychiatrists, nurses, and mental health workers were combined to form the medical group (n=24), and the psychologists, social workers, social work intern, unit manager, and occupational/recreational therapist were combined to form the clinical group (n=8).

Setting

The Second Chance Program is a 30-bed inpatient psychiatric rehabilitation unit. It was developed as an alternative treatment model for patients unable to be discharged

from state hospital settings (i.e., “treatment refractory” patients). The goal of the program is to maximize the likelihood that its “treatment-refractory” patients, all of whom are transfers from long-term state hospitals, can be discharged successfully to community settings. Treatment on the Second Chance Program is based on the premise that comprehensive treatment of serious mental illness includes optimal pharmacologic management in addition to a combination of psychosocial interventions targeting the specific psychosocial deficits of the individual patient. Social-learning theory principles guide treatment within the program which includes a combination of milieu management, group skills training, and individualized interventions to address patients' behavioral excesses and deficits. The milieu management system involves a point-based system for on- and off-ward privilege determination, and a token economy system that provides more immediate feedback for appropriate and inappropriate behaviors. All interventions on the unit promote learning and involve all staff on the unit. The Second Chance Program opened in 1998. At the time of this study was conducted, it had treated 350 patients and was beginning to achieve national recognition as an effective model for treating chronically psychotic patients within the context of a public-private partnership (Silverstein, Hatashita-Wong, & Block, 2001).

At the time of this project, the fundamental structure of the Second Chance Program had been established. (i.e., token economy, point/level systems, and group programs). However, the last phase of development, formal staff-training and evaluation, had not yet been completed.

All information and data for this study was gathered as part of a unit-wide clinical staff-training effort and program evaluation project. This study was approved

retrospectively for research purposes by the institutional review board at New York Presbyterian Hospital - Cornell Medical Center following the completion of the project. Data was considered archival.

Procedure

Staff Training. The training program was done by a team of two clinical psychologists. Training was approximately eight hours, spread over a four-week period (2 hour sessions each week). The content of the training focused on social-learning theory principles and procedures, along with more general concepts of behavior therapy. Concepts of serious mental illness and psychiatric rehabilitation were also covered. Intermixed with didactic instruction, staff were provided with modeling procedures demonstrating appropriate application of the principles. Staff also participated in role-plays and received feedback on their application of the principles.

Appendix A contains the 61 presentation slides used during the 8-hour behavior management training program. The content of the training program consisted of more than what is presented in the slides, and included role-playing and other interactive exercises with staff around interpersonal techniques consistent with the behavioral philosophy of the treatment program. The entire program, containing slides, didactic presentation and role-play demonstrations, is contained on 4 DVDs/videos, which are available upon request.

Group Assignment. All permanent staff on the Second Chance Program were required to complete the training program. The staff were divided into two training groups (group 1 and group 2); group 2 received training after group 1. Staff were initially

randomly assigned to either group 1 or group 2. However, due to scheduling difficulties, some staff had to be reassigned. Group 1 consisted of 12 staff memberss. The remaining 20 staff members were assigned to group 2.

Initial didactic training was live for group 1, and the training sessions were video recorded. For staff in the first group who could not attend the actual (live) didactic instruction (e.g., due to scheduling conflicts, illness, etc.), the training sessions were video taped and staff were able to watch the missed session at a different time. The video tapes were used for didactic instruction with all group 2 staff. Therefore, the material in each of the training sessions was identical, with the second training session occurring approximately two and a half months after the first training session.

Observational Ratings. 90 hours of direct observational assessment took place on the inpatient unit and were split between three time points (30 hours each). The first 30 hours was completed at baseline (Time 1), before staff received formal training. The second 30 hours took place after group 1 staff completed training and testing (Time 2), with the non-interactive observer unaware of which staff were in group 1 or group 2, and the third 30 hours took place after all staff completed training and testing (Time 3). Each 30 hour rating period lasted for approximately 2 and one half weeks. Observational ratings were gathered between the hours of 8:00 am and 8:00 pm, and were divided evenly between morning, afternoon, and evening hours (approximately 10 hours for each). The particular coding sessions (i.e., the specific times of the day at which they occurred and the particular days of the week they took place on) remained constant across the three time periods.

Observational ratings took place on the unit one-month prior to collecting the actual observational data that was used in this investigation. This was done to habituate staff and patients to the presence of the noninteractive observer and to establish reliability between raters. Staff were instructed that observer was to be unobtrusive, that they should not interact with the observer, and that they should allow the observer access to all unit activities (i.e., on the unit floor, within the nursing area and group/treatment rooms, and in patient rooms). Staff members on the unit were observed over 5-minute intervals, with the non-interactive observer rotating every 5 minutes between all staff members on the unit at any one time.

Reliability of Observational Ratings. Data for this project were coded by a single rater, who was unaware of which training group (i.e., first or second round) staff members were assigned to. In order to assess reliability of the observational ratings, however, the following process was used. A second rater rated 10 staff members simultaneously with the primary rater, for a total of 25 minutes per staff member, broken up into 5-minute intervals across 5 consecutive hours. The total time spent rating for reliability was thus 250 minutes. Intraclass correlation coefficients (ICC) were then calculated between the total scores of the two raters for each of the 25 behaviors, summed across staff members, which represented the total observed frequencies of each type of staff behavior observed. This procedure was used in place of calculating a separate ICC for each staff member and then averaging the ICCs, in order to avoid inflating the ICC due to the likely presence of multiple scores of zero for single staff members. The ICC was .98, which represents a high level of agreement between the two raters.

Measures

The Staff-Resident Interaction Fidelity Scale (SRIFS). The SRIFS is a modified version of the SRIC, and consists of 25 separate behavioral codes (Appendix B). It was developed as a time-specific observational behavior coding system for use on the Second Chance Program. Like the SRIC, it is designed to catalogue the nature, amount, content, and distribution of verbal and nonverbal staff interactions with patients, as well as to provide information about staff activities such as the amount of time staff observe patients on the unit and engage in paperwork and staff-to-staff conversations. The SRIFS was used in place of the SRIC because it contains more specific and detailed codes compared to the SRIC, as well as codes that were specifically linked to behaviors taught to staff since the opening of the Second Chance Program. For example, unlike the SRIC, the SRIFS contains specific codes for neutral verbal behavior. It also contains codes for "State Reality," "Elicit Alternative," "High EE" and " Staff Observing Patients (non-interactive)" which were target behaviors critical to the philosophy of the Second Chance Program. Descriptions of each of the codes 25 codes, as well as examples for each (taken from actual staff on the Second Chance Program) are listed in Appendix C.

Behavioral Training Written Exam. This is a 25-item written examination that was given after completion of the 8-hour training course (see Appendix D). It combines both a multiple-choice and free response format across items. The content of the exam covers all of the principles taught in that course, including basic behavioral principles (e.g., positive and negative reinforcement and positive and negative punishment, intermittent and differential reinforcement, extinction, shaping, chaining, etc.), the use of specific types of prompts in response to patient behavior, the rationales behind specific

data collection procedures, token economy principles and practices, outcome data from SLPs, and ethical issues.

In vivo Demonstration. This assessment consisted of 13 specific interpersonal behaviors towards patients (e.g., differential reinforcement during episodes of mostly disorganized speech, specific verbal praise, etc.) on which all staff were rated after completion of the written test (see Appendix E). These assessments were conducted by a single trained rater. Each behavior could be assessed up to five times before proceeding to the next behavior. Each time a behavior was assessed, a score of 1 (perfect), 2 (good), or 3 (substandard) was given. Once a score of 1 was achieved, the next behavior was assessed. If a score of 1 was not achieved after five attempts, the next behavior was assessed. Scores were calculated as the total number of points, divided by the total number of items (13), with lower scores representing better performance. Possible scores on this measure thus ranged from a worst of 45 (representing a failing score of 3 on each of the 5 trials on each of the 13 items, to a best of 1 (representing perfect performance of each behavior the first time it was assessed).

Social-learning Ideology Subscale (SLIS). The SLIS is a 9-item subscale of the Opinions of Mental Illness Scale (OMI) (Paul & Lentz, 1977). It is a measure of beliefs and attitudes about social learning principles as they relate to mental illness. Higher scores reflect more of a social-learning ideology (see Appendix F). The SLIS was administered once, after training was completed, before staff took the written exam.

Proposed Data Analyses

Below, each hypothesis (as listed above) will be described, followed by the data analysis procedures that were used to evaluate it. All analyses were done using "time corrected" scores (i.e., the number of times a behavior was coded divided by the number of times that staff member was observed). These corrected scores were used to eliminate the potential confound of certain staff or disciplines having higher scores simply by being on the unit more often.

Note that the sample as a whole was comprised of 32 subjects (i.e., observational rating data, pre- to post-training, was available for 32 subjects). However, due to scheduling constraints at the time of this study, testing data (i.e., written and *in vivo* assessments and SLIS scores) were available for 24 subjects.

Hypothesis 1a. At baseline, clinical staff (psychologists, social workers, and occupational/recreational therapists), relative to medical staff (psychiatrists, psychiatric nurses, and mental health workers), would display a greater number of positive and therapeutic behaviors, and fewer negative and non-interactive (observing staff on the unit) behaviors. There will be no differences between medical staff and clinical staff in the number of neutral or instructional behaviors, or in the amount of paperwork or staff-to-staff conversations. Specific behaviors included in each of the seven categories (e.g., positive, neutral, therapeutic, negative, and non-interactive/observing behaviors, paperwork, and staff-to-staff conversations) can be found in Table 1 below.

Analysis of Hypothesis 1a. Averaged scores for the seven behavior categories (e.g., positive, negative, neutral, etc.) were summed for each staff-member. Medical

and clinical staff were compared on their baseline scores on these seven *a priori* factors using a MANOVA procedure. Between-subjects effects tests compared the two groups on each of the 7 behaviors.

Hypothesis 1b. At time 3, Clinical staff, relative to medical staff, would display the same pattern of differences.

Proposed Analysis of Hypothesis 1b. The same analytic procedure used to test Hypothesis 1a will be used, but Time 3 scores will be the data set analyzed.

For Hypothesis 2, subhypotheses 2a and 2b were both tested using the same statistical procedure (see below).

Hypothesis 2a. At time 2, staff who have completed training (group 1), relative to those who did not (group 2), would demonstrate higher levels of positive and therapeutic behaviors. Staff who have completed training would also display fewer negative and non-interactive behaviors. There would be no differences between the groups in the amount of neutral, instructional, or paperwork and staff-to-staff conversations.

Hypothesis 2b. At time 3, after all staff have completed training, there would be no differences between the first group that completed training (group 1) and the second group (group 2) on any of the behavioral variables.

Proposed Analysis of Hypothesis 2a and 2b. These hypotheses were tested using MANOVAs with one between-subjects factor (2 groups) and 7 dependent variables (behavior categories). Separate MANOVAs were conducted for Time 2 and Time 3 scores. This was done rather than performing a repeated measures analysis across all 3 time points because preliminary analyses indicated that the two testing

groups did not differ in their scores at Time 1. This finding, in addition to our hypothesis that the two testing groups would not differ in their degree of change on a number of variables over time (e.g., paperwork), led to focused analyses comparing groups at single time points (Times 2 and 3) being more sensitive (and more highly powered) tests of the hypothesis than a group x time interaction examining all 7 behavior categories across the 3 time points. However, a MANOVA using time as a within-subjects factor was conducted to determine whether there was the predicted main effect of time from Time 1 (pre-training) to Time 3 (after all staff have been trained).

Hypothesis 3a. At time 3, after all staff have completed training, better performance on both the written and *in vivo* assessments would be associated with increased change in positive and therapeutic staff behaviors (from pre- to post-training), and decreased negative and non-interactive/observational behaviors (from pre- to post-training). Performance on the written and *in vivo* assessments would be unrelated to the amount of neutral, instructional, or paperwork and staff-to-staff conversations.

Proposed Analysis of Hypothesis 3a. Change scores (Time 3 minus Time 1) were computed for all staff for the 7 behavior categories. Correlations were computed between these change scores and scores on the *in vivo* and written assessments to determine whether staff who performed better on these assessments demonstrated greater improvement in their on-ward behaviors towards patients. Correlations were also performed between the two test scores and (averaged) Time 1 and Time 3 scores

separately, to determine if test scores correlated with performance independent of learning.

Hypothesis 3b. It was hypothesized that performance on the *in vivo* assessment would be more predictive of staff behavior on the unit at post-assessment (e.g., higher scores would be associated with more positive and therapeutic behaviors and fewer negative non-interactive/observational behaviors), than performance on the written test.

Proposed Analysis of Hypotheses 3b. Correlations were performed between the written test and behavior factor scores, and between the *in vivo* test and behavior factor scores at Time 3. The magnitude of these correlations were then compared, to determine which test better predicted on-ward behavior. For each of the 7 behavior categories (at Time 3), separate hierarchical regressions were performed, to determine the combined predictive ability of the pre-training test scores on post-training behavior. A canonical correlation was performed using the two test scores and the 7 behavior category scores.

Hypothesis 4. It was hypothesized that lower levels of social-learning ideology, as measured by the Social-learning Ideology Subscale (SLIS) of the OMI (Paul & Lentz, 1977) would be associated with reduced improvement in positive, therapeutic, negative, and non-interactive behaviors pre- to post-observational assessment (from baseline to time 3). There would be no significant relationships between Social-learning Ideology Subscale score and the amount of neutral, instructional, or paperwork and staff-to-staff conversations.

Proposed analysis of Hypotheses 4. The change scores for each of the behavior factors, noted above in discussion of the analysis of hypothesis 3a, were correlated with SLIS scores. It was predicted that SLIS scores indicative of a lower social learning ideology would be significantly related to smaller improvements in behavior over time for the behavior categories, but not for the factors including neutral, instructional, or paperwork and staff-staff conversations. MANCOVA (with SLIS scores as a covariate) was used to examine the contribution of social-learning ideology to behavior change from Time 1 to Time 3.

Power Analysis for Primary Analyses

The total N for this sample was 32. Based on the staff training study of Jones, Menditto et al. (2001) who found large effect sizes (typically within the d=1.5 to 2.5 range, depending on the staff behavior being measured) in their pre-training to post-training repeated measures analyses, large effect sizes for the between groups and group x time interaction terms for were estimated for this study. A large effect size was estimated both for the effect of training (based on the Jones et al. 2001 paper), as

well as for baseline differences between medical and non-medical staff, owing to presumed differences in their prior training, and based on the author's observations on several behavioral rehabilitation units. Power analyses were calculated using the effect size index f. After Cohen, a large effect size was defined as f=.4. For all power analyses, unless otherwise noted, alpha was set at .05, and N at 32.

Hypothesis 1a. This hypothesis, involving baseline differences between staff disciplines, was tested with a MANOVA procedure. Assuming a large effect size for the between-groups effect, power is .59.

Hypothesis 1b. Because the same magnitude of difference between the two staff disciplines is expected at Time 3 as exists at Time 1, power is .59 to detect this difference.

Hypothesis 2a-2b. These hypotheses involve change over the 3 time points for the groups that receive training at Time 2 versus Time 3. The critical test of power here involves the ability to detect a difference in the changes across the 3 time points between the 2 (i.e., training at Time 2 vs. Time 3) groups. Once again, the power to detect an overall between-groups effect is .59. That is also the power estimate for between-group comparisons at any of the single time points (e.g., baseline, Time 2, or Time 3). Power to detect a significant group x time interaction is .80.

Hypotheses 3a-3b. These hypotheses involve correlational analyses between written and *in-vivo* test scores, and various aspects of staff behavior. For these analyses, N=24. With N=24, the magnitude of the Pearson correlation coefficient needs to exceed .39 to reach statistical significance (it must be greater than .41 for Spearman rho), assuming a two-tailed test. Power to detect a correlation of .39 is .49.

Hypotheses 4. This hypothesis involves correlations between SLIS scores (reflecting social learning ideology at baseline) and level of improvement from pre- to post-training on staff behavior variables. Power estimates are the same as for Hypotheses 3a-3c as described above.

Summary. Power is adequate (~.80) to detect interactions between the group and time variables. Power is lower (~.60) for detecting between-groups effects at single time points. For correlational analyses, power is low (~.50) to detect the smallest statistically significant correlation. Hypotheses 3 and 4, however, are not the primary hypotheses of this study, however, and therefore can be considered more exploratory analyses.

CHAPTER FIVE

Results

Hypothesis 1a

MANOVA was used to compare clinical and medical staff, and indicated a significant group effect using Wilks' Lambda ($F(4,24) = 14.00$, $p < .0001$). Between subjects effects tests indicated significant group differences, with clinical staff displaying significantly more therapeutic behaviors ($F(1,27) = 56.20$, $p<.0001$) and significantly fewer negative behaviors ($F(1,27) = 7.26$, $p<.025$) compared to medical staff, as predicted (see Table 2). Unexpectedly, clinical staff displayed significantly fewer instances of paperwork and staff-to-staff conversations compared to medical staff ($F(1,27) = 4.40$, $p<.05$). There were no significant differences between the two groups on the number of positive behaviors ($F(1,27) = 2.64$, $p=.12$), neutral behaviors ($F(1,27) = 0.21$, $p=.65$), instructing behaviors ($F(1,27) = 0.85$, $p=.37$), or non-interactive observing behaviors ($F(1,27) = 2.53$, $p=.12$). See Table 2 for means and standard deviations.

Table 2. Mean percent (%) rating scores and standard deviations (SD) on the 7 behavior categories from the Staff-Resident Interaction Chronograph Fidelity Scale (SRIFS) for clinical and medical staff at Time 1.

	Positive Behavior	Negative Behavior	Neutral Behavior	Therapeutic Behavior	Instruct Behavior	Non-Interactive Behavior	Paperwork/ Staff-Staff Conversation
Clinical Staff	27% (06)	5%* (00)	7% (07)	23%*** (06)	30% (10)	00% (00)	08%* (08)
Medical Staff	20% (12)	12%* (12)	6% (08)	6%*** (05)	25% (14)	11% (20)	23%* (20)

*$p<.05$
**$p<.01$
***$p<.001$

Hypothesis 1b

At time 3, there were again significant group differences between clinical and medical staff (Wilks' Lambda $F(7,20) = 4.01$, $p < .01$). Between-subjects effects tests on the individual behavior categories indicated that clinical staff displayed significantly more therapeutic behaviors ($F(1,26) = 20.46$, $p<.0001$) and significantly fewer negative behaviors ($F(1,26) = 4.65$, $p<.05$) compared to medical staff (see Table 3). Unexpectedly, clinical staff displayed significantly more instances of instructing behaviors compared to medical staff ($F(1,26) = 4.67$, $p<.05$). There were no significant differences between the two groups on the number of positive behaviors ($F(1,26) = 0.56$, $p=.46$), neutral behaviors ($F(1,26) = 1.30$, $p=.27$), or paperwork and staff-to-staff conversations ($F(1,26) = 1.61$, $p=.22$). There was a trend toward significance with clinical staff displaying significantly fewer non-interactive observing behaviors compared to medical staff ($F(1,26) = 3.96$, $p=.06$).

Table 3. Mean percent (%) rating scores and standard deviations (SD) on the 7 behavior categories from the Staff-Resident Interaction Chronograph Fidelity Scale (SRIFS) for clinical and medical staff at Time 3.

	Positive Behavior	Negative Behavior	Neutral Behavior	Therapeutic Behavior	Instruct Behavior	Non-Interactive Behavior	Paperwork/ Staff-Staff Conversation
Clinical Staff	40% (10)	2%* (04)	6% (07)	24%*** (10)	21%* (09)	00% (00)	06% (06)
Medical Staff	37% (11)	3%* (03)	4% (02)	10%*** (06)	29%* (08)	06% (08)	13% (16)

*$p<.05$
**$p<.01$
***$p<.001$

Hypothesis 2a

At Time 2, there was a trend towards a significant overall group difference in behaviors between the group that had just finished training compared to the group that had not yet received training (Wilks' Lambda $F(7,21)=2.44$, $p=.054$). As predicted, trained staff demonstrated higher levels of therapeutic behaviors [$F(1,27)=16.70$, $p<.001$]. There were trends towards trained staff demonstrating fewer negative behaviors [$F(1,27)=3.15$, $p<.09$] and fewer non-interactive behaviors [$F(1,27)=3.58$, $p<.07$]. As expected, the groups did not differ significantly on the categories of neutral [$F(1,27)=0.10$, $p=.76$], instructional [$F(1,27)=1.87$, $p=.18$], or paperwork and staff-staff conversations [$F(1,27)=2.23$, $p=.15$]. Unexpectedly, the groups did not differ in their number of positive behaviors [$F(1,27)=2.32$ $p=.14$]. See Table 4 for means and standard deviations for the two groups at Time 2.

Table 4. Mean percent (%) rating scores and standard deviations (SD) on the 7 behavior categories from the Staff-Resident Interaction Chronograph Fidelity Scale (SRIFS) for the staff who completed training (Group 1) and staff who did not complete training (Group 2) at Time 2.

	Positive Behavior	Negative Behavior	Neutral Behavior	Therapeutic Behavior	Instruct Behavior	Non-Interactive Behavior	Paperwork/ Staff-Staff Conversation
Group 1	40% (08)	1% (02)	5% (03)	20%*** (10)	22% (09)	02% (05)	11% (12)
Group 2	32% (13)	5% (07)	6% (07)	06%*** (12)	27% (11)	07% (07)	19% (15)

*$p<.05$
**$p<.01$
***$p<.001$

Hypothesis 2b

At Time 3, there was a significant group difference, with the group that had received training first demonstrating more appropriate staff behaviors (e.g., more therapeutic behaviors, less non-interactive behaviors) in all 7 categories [$F(7,20)=3.24$, $p<.025$], although most of these differences were not statistically significant. Between-subjects effects indicated that the group that was trained first demonstrated significantly more therapeutic behaviors [$F(1,26)=10.04$, $p<.005$], fewer instructing behaviors [$F(1,26)=5.15$, $p<.05$], and fewer non-interactive behaviors [$F(1,26)=5.20$, $p<.05$]. The groups did not differ on the variables positive [$F(1,26)=1.54$, $p=.23$], negative [$F(1,26)=2.48$, $p=.13$], neutral [$F(1,26)=0.30$, $p=.59$], and paperwork and staff-staff conversations [$F(1,26)=0.54$, $p=.47$].

As predicted, when the behavior category scores were compared from Time 1 to Time 3, the overall effect of group was statistically significant [$F(1,23)=6.03$, $p<.05$]. The main effect of behavior was also significant [$F(3,21)=40.34$, $p<.001$], indicating that levels of classes of behaviors varied. In addition, the time x behavior interaction effect was significant [$F(3,21)=26.75$, $p<.001$] indicating that the level of change from pre- to post-training differed among the behavior categories. A series of matched pair t-tests was computed to determine which behaviors changed significantly over time. Behavior categories associated with significant change were: positive (increased) [$t(24)=-11.00$, $p<.001$]; negative (decreased) [$t(24)=3.43$, $p<.005$]; therapeutic (increased) [$t(24)=-2.07$, $p<.05$]; paperwork and staff-staff conversations (decreased) [$t(24)= 2.97$, $p<.01$]. There was a trend toward a significant change in neutral behaviors (decreased), $t(21)= 1.80$,

$p<.09$]. There were no significant changes in the following behavior classes: instructing [$t(24)= 0.37$, $p=.71$], and non-interactive behaviors [$t(24)= 1.05$, $p=.31$]. See Table 5 for means and standard deviations for the 7 behaviors at Time 1 and Time 3.

Table 5. Mean percent (%) rating scores and standard deviations (SD) on the 7 behavior categories from the Staff-Resident Interaction Chronograph Fidelity Scale (SRIFS) for all staff at Time 1 (before training) and Time 3 (after all staff completed training).

	Positive Behavior	Negative Behavior	Neutral Behavior	Therapeutic Behavior	Instruct Behavior	Non-Interactive Behavior	Paperwork/ Staff-Staff Conversation
Time 1	24%*** (10)	6** (08)	7% (08)	11%* (10)	26% (13)	08% (18)	20%** (20)
Time 3	38%*** (11)	2%** (0)	4% (05)	15%* (10)	25% (09)	04% (07)	11%** (15)

*$p<.05$
**$p<.01$
***$p<.001$

Hypothesis 3a

Scores on the written and in-vivo tests were significantly correlated, $r(22)=-.87$, $p<.001$.

Correlations between written test scores and behavior scores at Time 1 (pre-training) revealed significant relationships with positive [$r(20)=.62$, $p<.005$], negative [$r(20)=-.63$, $p<.005$], and therapeutic [$r(20)=.56$, $p<.01$] behaviors. Other correlations were not significant. Correlations between *in-vivo* test scores and behavior scores at Time 1 (pre-training) revealed significant relationships with negative [$r(20)=.80$, $p<.001$], and therapeutic [$r(20)=-.51$, $p<.025$] behaviors. Other correlations were not significant (see Table 6 for all Time 1 correlations with written and *in-vivo* test scores)

Table 6. Pearson Correlations (*r*) and significance values (*p*) for the 7 behavior categories from the Staff-Resident Interaction Chronograph Fidelity Scale (SRIFS) at Time 1 and Written Exam and *In-Vivo* test scores.

Time 1	Positive Behaviors	Negative Behaviors	Neutral Behaviors	Therapeutic Behaviors	Instruct Behaviors	Non-Interactive Behaviors	Paperwork Staff-Staff Convers.
Written Exam Score	.62 (<.005)	-.63 (<.005)	.29 (.19)	.56 (<.01)	.17 (.45)	.09 (.68)	-.31 (.15)
In-Vivo Exam Score	-.30 (.18)	.80 (<.001)	-.25 (.26)	-.51 (<.05)	.04 (.87)	.10 (.66)	.04 (.87)

Correlations between written test scores and behavior scores at Time 3 (pre-training) revealed significant relationships with positive[$r(22)=.62$, $p<.005$], negative [$r(22)=-.54$, $p<.01$], therapeutic [$r(22)=.55$, $p<.01$], instructing [$r(22)=-.44$, $p<.05$], and paperwork and staff-staff conversation behaviors [$r(22)=-.42$, $p<.05$]. Other correlations were not significant. Correlations between *in-vivo* test scores and behavior scores at Time 3 (pre-training) revealed significant relationships with negative [$r(22)=.56$, $p<.01$], and therapeutic [$r(22)=-.42$, $p<.05$], and instructing [$r(22)=.52$, $p<.01$] behaviors. Other correlations were not significant (see Table 7 for all Time 3 correlations with written and *in-vivo* test scores).

Table 7. Pearson Correlations (*r*) and significance values (*p*) for the 7 behavior categories from the Staff-Resident Interaction Chronograph Fidelity Scale (SRIFS) at Time 3 and Written Exam and *In-Vivo* test scores.

Time 3	Positive Behaviors	Negative Behaviors	Neutral Behaviors	Therapeutic Behaviors	Instruct Behaviors	Non-Interactive Behaviors	Paperwork Staff-Staff Convers.
Written Exam Score	.62 (<.005)	-.54 (<.01)	.23 (.31)	.55 (<.01)	-.44 (<.05)	-.31 (.15)	-.42 (<.05)
In-Vivo Exam Score	-.31 (.18)	.55 (<.01)	-.25 (.23)	-.42 (<.05)	.52 (<.01)	.37 (.08)	.08 (.68)

Correlations between test scores and behavior change scores from pre- to post-training, indicated significant correlations with negative behaviors: written [$r(22)=.53$, $p<.05$]; in-vivo [$r(22)=-.70$, $p<.001$]. Correlations between test scores and change in other classes of behavior across time were not significant (see Table 8 for all Time 3 correlations with written and *in-vivo* test scores).

Table 8. Pearson Correlations (*r*) and significance values (*p*) for change scores (Time 3 – Time 1) for the 7 behavior categories from the Staff-Resident Interaction Chronograph Fidelity Scale (SRIFS).

Change Scores	Positive Behaviors	Negative Behaviors	Neutral Behaviors	Therapeutic Behaviors	Instruct Behaviors	Non-Interactive Behaviors	Paperwork Staff-Staff Convers.
Written Exam Score	.16 (.48)	.53 (<.05)	-.18 (.42)	.05 (.84)	-.36 (.10)	-.19 (.40)	-.10 (.67)
In-Vivo Exam Score	-.03 (.89)	-.70 (<.001)	.10 (.67)	.07 (.76)	.22 (.32)	.02 (.94)	.11 (.64)

Hypothesis 3b

Differences in the magnitude of correlations between the written and the *in-vivo* test scores for each of the 7 behavior scores were examined. Differences between the written and *in-vivo* correlations were calculated for the Time 1, Time 3, and the change scores (Time 1 – Time 3). There were no significant differences between the written and *in-vivo* correlations at Time 1, Time 3, or change scores (see table 9 for correlations and significance values).

Table 9. z scores and significance values (*p*) assessing the difference between the correlation coefficients of written test scores and in-vivo test scores and the 7 behavior categories from the Staff-Resident Interaction Chronograph Fidelity Scale (SRIFS).

	Positive Behavior	Negative Behavior	Neutral Behavior	Therapeutic Behavior	Instruct Behavior	Non-Interactive Behavior	Paperwork/ Staff-Staff Conversation
Time 1	1.27 (.20)	-1.08 (.28)	0.13 (.89)	0.22 (.83)	0.41 (.68)	-0.02 (.94)	0.87 (.38)
Time 3	1.33 (.18)	-0.06 (.95)	-0.13 (.90)	0.55 (.58)	-0.35 (.73)	0.23 (.81)	1.15 (.25)
Change Score	0.40 (.69)	-0.85 (.40)	0.26 (.79)	-.07 (.94)	25% (09)	0.54 (.60)	-0.03 (.98)

Hierarchical regression analyses were done to examine the extent to which the written and *in-vivo* test scores predicted change in the classes of staff behavior (Change Scores).

For change in positive behavior, entering the written test score first did not result in a significant model [$F(1,20)=0.53$), $p=.48$], and when the *in-vivo* score was entered at step 2, the model was also not significant [$F(1,20)=0.33$), $p=.44$]. Entering the *in-vivo* test

score first did not result in a significant model [$F(1,20)=0.21$), $p=.89$], and when the written score was entered at step 2, the model was also not significant [$F(1,20)=1.13$), $p=.30$].

For change in negative behavior, when written test score was entered first, $R^2=.28$ (adjusted $R^2=.25$), which was a significant value [$F(1,20)=7.89$), $p<.05$]. When the *in-vivo* score was entered at step 2, R^2 increased to .50 (adjusted $R^2=.45$), a change in R^2 of .21. This was a significant increase in the amount of variance accounted for in the dependent variable [F change $(1,19)=8.11$, $p=.01$). When *in-vivo* score was entered on step 1, $R^2=.49$ (adjusted $R^2=.47$), which was a significant value [$F(1,20)=19.25$), $p<.001$]. However, adding the written test score at step 2 did not significantly increase prediction [change in $R^2=.007$, F change $(1,19)= .26$, $p>.61$]. Therefore, while both test scores significantly predict change in negative staff behaviors, the *in-vivo* score increases predictive ability over and above that of the written test score, while the written score does not increase prediction over and above the *in-vivo* score.

For change in neutral behavior, entering the written test score first did not result in a significant model [$F(1,20)=0.68$), $p=.42$], and when the *in-vivo* score was entered at step 2, the model was also not significant [$F(1,20)=0.18$), $p=.68$]. Entering the *in-vivo* test score first did not result in a significant model [$F(1,20)=0.19$), $p=.67$], and when the written score was entered at step 2, the model was also not significant [$F(1,20)=0.64$), $p=.43$].

For change in therapeutic behavior, entering the written test score first did not result in a significant model [$F(1,20)=0.43$), $p=.84$], and when the *in-vivo* score was entered at step 2, the model was also not significant [$F(1,20)=0.72$), $p=.41$]. Entering the

in-vivo test score first did not result in a significant model [$F(1,20)=0.97$), $p=.76$], and when the written score was entered at step 2, the model was also not significant [$F(1,20)=0.67$), $p=.42$].

For change in instructional behavior, entering the written test score first did not result in a significant model [$F(1,20)=2.93$), $p=.10$], and when the *in-vivo* score was entered at step 2, the model was also not significant [$F(1,20)=0.39$), $p=.54$]. Entering the *in-vivo* test score first did not result in a significant model [$F(1,20)=1.02$), $p=.32$], and when the written score was entered at step 2, the model was also not significant [$F(1,20)=2.15$), $p=.16$].

For change in non-interactive behavior, entering the written test score first did not result in a significant model [$F(1,20)=0.75$), $p=.40$], and when the *in-vivo* score was entered at step 2, the model was also not significant [$F(1,20)=1.33$), $p=.26$]. Entering the *in-vivo* test score first did not result in a significant model [$F(1,20)=0.01$), $p=.94$], and when the written score was entered at step 2, the model was also not significant [$F(1,20)=2.10$), $p=.17$].

For change in paperwork and staff-staff conversations, entering the written test score first did not result in a significant model [$F(1,20)=0.19$), $p=.67$], and when the *in-vivo* score was entered at step 2, the model was also not significant [$F(1,20)=0.43$), $p=.84$]. Entering the *in-vivo* test score first did not result in a significant model [$F(1,20)=0.23$), $p=.64$], and when the written score was entered at step 2, the model was also not significant [$F(1,20)=0.01$), $p=.95$].

Canonical correlation analyses were conducted to determine the relationships between test scores (considered as a set) and change scores on the 7 behavior category

variables (considered as a set). This correlation was based on 22 cases, and was statistically significant [R^2=.87, Shrunk R^2=.70, F(14,26)=3.36, p<.005]. Among the dependent variable set, only change in negative staff behaviors was significantly predicted by the independent variable set (F=9.74, p=.001).

These analyses were repeated with test scores and Time 1 behavior scores. For the Time 1 behavior set, the correlation was based on 22 cases and was statistically significant [R^2=.94, Shrunk R^2=.86, F(14,26)=5.84, p<.001]. Among the dependent variable set, positive (F=10.70, p=.001), negative (F=17.30, p<.001), and therapeutic (F=4.65, p<.05) behaviors were significantly predicted by the independent variable (test score) set.

Canonical correlations were repeated with test scores and Time 3 behavior scores. For the Time 3 behavior set, the correlation was based on 24 cases and was statistically significant [R^2=.86, Shrunk R^2=.70, F(14,30)=3.49, p<.005]. Among the dependent variable set, positive (F=15.85, p<.001), negative (F=4.91, p<.01), therapeutic (F=4.96, p<.05), instruct (F=4.06, p<.05), and paperwork and staff-staff conversations (F=9.24, p<.005) were significantly predicted by the independent variable (test score) set.

Hypothesis 4

Correlations between Social-Learning Ideology Subscale scores (SLIS) and change scores were conducted for each of the 7 behaviors. There was a significant correlation with negative behavior [r(21)=-.51, p<.05]. No other correlations were significant (see Table 10 for correlations and significance values).

Table 10. Pearson Correlations (*r*) and significance values (*p*) between Social-Learning Ideology Subscale (SLIS) scores and the change scores from the Staff-Resident Interaction Chronograph Fidelity Scale (SRIFS) for the 7 behavior categories.

Change Scores	Positive Behaviors	Negative Behaviors	Neutral Behaviors	Therapeutic Behaviors	Instruct Behaviors	Non-Interactive Behaviors	Paperwork Staff-Staff Convers.
SLIS	.06 (.81)	-.51 (<.05)	.03 (.89)	.24 (.30)	-.07 (.76)	-.34 (.11)	-.01 (.96)

Repeated measures MANCOVA (with SLIS as a covariate) was performed to determine if a significant proportion of the variance in behavior change from Time 1 to Time 3 could be accounted for by social-learning ideology. The main effect of behavior was significant [$F(6,14)=27.53$, $p<.001$], however, the behavior by SLIS score interaction was not significant [$F(6,14)=1.70$, $p=.19$].

Additional Analyses

Relationships between the number of years staff worked on the unit, test performance, and staff behaviors pre- and post-training were examined.

A greater number of years working on the unit was associated poorer performance on the written exam [$r(23)=-.63$, $p=.001$] and on the *in-vivo* exam [$r(23)=.56$, $p<.01$].

At Time 1, more years working on the unit was associated with fewer positive [$r(26)=-.49$, $p<.05$], neutral [$r(26)=-.40$, $p<.05$], and therapeutic behaviors [$r(26)=-.41$, $p<.05$], and increased paperwork and staff-staff conversations [$r(26)=.45$, $p<.05$]. There was a trend toward significance with increased years working on the unit being associated with increased amounts of non-interactive behaviors [$r(26)=-.35$, $p=.08$]. At

Time 1 years working was not significantly associated with negative [$r(27)=-.18$, $p=.37$] or instructing [$r(27)=-.32$, $p=.11$] behaviors.

At Time 3, more years working on the unit was associated with fewer positive [$r(27)=-.48$, $p<.05$] and therapeutic [$r(27)=-.43$, $p<.05$] behaviors and increased paperwork and staff-staff conversations [$r(27)=.45$, $p<.05$]. At Time 3, years working was not significantly associated with negative [$r(27)=-.01$, $p=.97$], neutral [$r(27)=-.26$, $p=.20$], instructing [$r(27)=.27$, $p=.18$], or non-interactive [$r(27)=.26$, $p=.20$] behaviors. There were also no significant correlations between change scores (Time 3 minus Time 1) for any of the seven behaviors and number of years working on the unit ($p>.05$).

Relationships between SLIS score and years working on the unit, and performance on the written and in-vivo exams were also examined. SLIS score was not significantly correlated with the number of years staff worked on the unit [$r(23)=.06$, $p=.79$] or performance on the written [$r(23)=.01$, $p=.97$] or *in-vivo* exams.

CHAPTER SIX

Discussion

This investigation examined naturally occuring differences between professional disciplines in seven classes of staff behaviors on a long-term, social-learning-based, inpatient psychiatric rehabilitation program. It also examined the effects of a staff-training program on staff-patient interactions within the same program. Results demonstrated significant differences between staff adhering to a medical model compared to staff operating more from within a rehabilitation model. In addition, the data demonstrated that the training program had an impact on staff behavior, especially on reducing negative behaviors and increasing the frequency of therapeutic behaviors. However, the overall pattern of results was complex and some unexpected findings emerged. In the following section, I will discuss the results corresponding to each of the hypotheses presented above. After the discussion of the results, I will then discuss limitations of the study, implications for staff-training efforts, and future directions of staff-training research.

Hypothesis 1a

As predicted there were significant differences at baseline between clinical staff and medical staff in their interactions with patients and on-ward behaviors, with clinical staff demonstrating significantly more therapeutic behaviors and fewer negative behaviors, and instances of paperwork and staff-staff conversations compared to medical staff. These findings support the view that there are marked differences in the quality of interactions between medical staff and clinical staff. Psychiatrists, nurses, and mental

health workers, trained within the medical model, have traditionally viewed mental illness as “biological” in nature and have de-emphasized psychosocial and/or contextual factors in the etiology and treatment of mental illness (Kutchins & Kirk, 1997; Leff, 2001). This difference in training philosophy has translated into differences in conceptualizations of mental illness and differences in job responsibility. Nursing staff and mental health workers focus more on the day to day management and living conditions of patient care compared to clinical staff who focus more on therapy and treatment modalities (Donat & McKeegan, 1990). Alternatively, psychiatrists tend to focus on medication management. This difference, along with fundamental differences in training modality (i.e., medical model versus psychological) would likely result in marked differences in behavior. Not surprising, clinical staff displayed more therapeutic behaviors and fewer negative behaviors. This difference would be consistent with the types of skills emphasized in the clinical training of psychologists and social workers (Levant, 2005), including a greater emphasis on validating and reflecting patients behaviors and emotions, along with making connections between the patient’s behavior and therapy goals. Alternatively, past research has demonstrated that nursing staff show significantly less formal knowledge of behavior therapy and greater amounts of work-related stress and compared to clinical staff (Corrigan, 1994). Moreover, psychiatric staff who believe that symptoms and difficult patient behaviors are the result of personality attributes and patient characteristics have been shown to have higher levels of EE, which are similar to the types of negative behaviors in this study (Moore et al., 1992; Snyder et al., 1995). Negative behaviors in this study varied and included disapproving statements such as “shut up” and “you look a mess,” as well as attempts to try to control and/or

change patient behavior such as “if you can’t lower your voice like a normal person, you’ll have to get a time out” and “if you can’t be quiet, I’m going to put you on a tray and put you out in the rain.”

Contrary to predictions, there were no differences between the groups in the number of positive or non-interactive behaviors. It could be that the differences between medical and clinical staff training philosophies have little bearing on positive behaviors. Positive behaviors, such as “you look nice today” and “good job” take less formal training and skill to implement. Moreover, positive behaviors have little to do with some of the more complex principles specific to the staff-training program.

Hypothesis 1b

Differences between medical staff and clinical staff remained at Time 3. Similar to Time 1, at Time 3 clinical staff displayed significantly more therapeutic behaviors and significantly fewer negative behaviors compared to medical staff. Unexpectedly, clinical staff displayed significantly fewer instances of instructing behaviors compared to medical staff. There was a trend with clinical staff displaying significantly less non-interactive behaviors compared to medical staff. In short, even after a multi-component training program that demonstrated effects on staff behavior (see below), medical staff were still more negative and less therapeutic in their interactions with patients compared to clinical staff.

There are several potential reasons why this may have occurred. For example, differences between groups in pre-existing treatment ideology (medical model verses psychology/social-social) may have been strong enough to persist beyond the effects of

the staff-training program. This would not be unexpected as staff had been trained and reinforced in their ideologies over many years, compared to the relatively short period of the training program, which lasted only several weeks. It is also possible that both groups are equally amenable to change, but that clinical staff and medical staff require different types of training. Specifically, training in a new ideology (i.e., for medical staff) may require more time or different techniques than training that is consistent with pre-existing ideology (i.e., for clinical staff). It is also possible that having a trainer from the same background may exert a greater influence than a trainer from a different background (in this study the trainers were psychologists). It is also possible, however, that people enter into their respective fields, with their respective ideologies, owing to pre-existing compatabilities with those ideologies. That is, physicians and nurses, for example, may have entered those professions because of an interest and comfort in paternalistic care in which prescribing medical solutions to problems was a gratifying method of working with people. In contrast, clinical staff may have entered their professions (e.g., psychology, social work) because developing relationships with clients appealed to them.

It is clear from the data that the effects of the training program were, in part, a function of the similarity between the taught ideology and pre-existing ideology. The extent to which longstanding biases which predate choice of profession contribute to the variance in staff behaviors cannot be determined from the present data set. However, this is an area worthy of exploration. At the same time, finding methods to alter basic education in different disciplines (e.g., medical school, nursing school) to promote a

rehabilitative approach to care, and devising training practices specifically for staff who hold ideologies that differ from what is being taught, are important goals for the future.

Hypothesis 2a

As expected, at Time 2, staff who completed training displayed significantly more instances of therapeutic behaviors compared to staff who had not yet received training. This finding is consistent with previous work demonstrating an overall increase in staff-patient interactions, particularly in positive and therapy-related behaviors following formal training in social-learning principles among mental health professionals (Jones et al., 2001). Like the Jones et al. (2001) investigation, staff displayed fewer negative and non-interactive behaviors (both trends) suggesting that staff learned more effective ways of controlling patient behaviors and became more active overall. Unexpectedly, trained staff did not differ from untrained staff in the number of positive behaviors displayed. It is unclear at this point why there was not a significant differences in positive behaviors between the two groups.It is possible that the training program did not have any real effect on positive behaviors, despite the changes in the important classes of therapeutic and negative behaviors. It is also, possible, however, that the lack of effect on positive behaviors is an artifact of untrained staff changing their rate of positive behaviors in parallel with trained staff, through exposure to and observation of changes in behavior in the trained staff. Both groups (staff who completed training and those who did not) were working together on the unit and interacting with patients at Time 2, allowing for untrained staff to observe the behaviors of trained staff. Of course, this hypothesis raises the question of whether untrained staff could learn any or all of the behaviors taught to

trained staff simply by observing changes in the latter group. Clearly, this did not occur because group differences were larger for some classes of behaviors than others. It may be that positive behaviors can be more easily learned by simple observation (e.g., “good job”) than therapeutic behaviors (e.g., “I can see that you are feeling frustrated at having to wait to meet with me, what might be some other ways to get my attention instead of yelling?”). That is, it may be that changes in more complex behaviors (e.g., therapeutic behaviors) and or more ingrained patterns of behavior (e.g., negative behaviors) require exposure to formal training methods, or more intensive learning experiences, than simpler behaviors such as making a brief positive comment to someone.

Hypothesis 2b

Contrary to the stated hypothesis, there continued to be differences between the group that received training first compared to the group that received training second at Time 3. Specifically, the group that received training first displayed significantly more therapeutic behaviors and fewer instructing and non-interactive behaviors at Time 3. This could be because the first training group had a longer time to improve, and that continued improvement occurred even after training ended, whereas for the group trained second, the collection of Time 3 data immediately after their training ended did not allow for detection of any continued improvement in a “follow-up” period. It is important to note that the groups did not differ in their behavior at Time 1. As a result, the observed differences between the groups were a result of the training and persisted to Time 3.

When all staff were compared from Time 1 to Time 3 there were significant changes in the quality of staff behaviors as a result of the training. Specifically, at Time 3

all staff displayed significantly more positive and therapeutic behaviors and fewer instances of negative behaviors suggesting that overall, the training program was successful. These results are particularly powerful given the relatively small sample size, , and highlight the utility of social-learning programs and the effectiveness of interactive staff training programs that focus on mastery of skill acquisition.

Hypothesis 3a

As would be expected, performance in the written and *in-vivo* examinations were highly correlated indicating that they are tapping similar information and skills. Moreover, as predicted, performance on both the written and in-vivo exams were associated with particular changes in staff behaviors. In particular, at Time 1, written test performance was associated with increased positive and therapeutic behaviors and fewer negative behaviors. The ability to actually demonstrate the skills (i.e., i*n-vivo* test performance) was also associated with increased therapeutic behaviors and decreased negative behaviors. It could be that staff who entered into training with interactive skills consistent with a social-learning ideology were able to benefit and learn more from the training.

Performance on the written and *in-vivo* tests was also associated with Time 3 behaviors. Written test performance was significantly associated with an increase in positive and therapeutic behaviors, and a decrease in negative, and instructing behaviors. It could be that staff switched from simply “instructing” patients or telling them what to do (such as an activity demand) to using more therapeutic interactions including such things as validating and reflecting, as a result of the training program. In terms of change

or learned behavior (change scores Time 3 – Time 1) that could be predicted from scores on the written and *in-vivo* exams, the relationship was only significant for negative behaviors. However, this was consistent across both written and *in-vivo* test performance. It could be that negative behaviors are a more sensitive indicator of staff learning – both as assessed by rote knowledge (written exam) and the ability to demonstrate newly acquired skills (*in-vivo* exam). Certainly, given the literature on the negative effects of high levels of hostile and critical expressed emotion, the ability of the training program to reduce negative staff behaviors towards patients is a finding of significant clinical relevance.

Hypothesis 3b

In order to examine which test modality is a better indicator of actual staff behavior, the magnitude of correlations were compared for the written and in-vivo exams at each time point (Time 1, Time 3, and change scores). Comparison of the magnitude of correlations did not yield significant differences. However, when using hierarchical regression analyses to identify which would be a more powerful predictor, significant differences in predictive ability were found for negative behaviors only. Both written test score performance and *in-vivo* performance were significant predictors of change in negative behaviors at Time 3. However, performance on the *in-vivo* examination predicted variance in negative staff behavior above and beyond performance on the written exam. This result has significant implications for staff-training needs and assessment. If cost and time are an issue in assessing learning in staff-training efforts, the in-vivo exam appears to be a superior index of the target (negative) behavior.

Hypothesis 4

There was only partial support for the hypothesis that lower levels of social learning ideology, as assessed by the SLIS, would be associated with reduced improvement in staff behaviors pre- to post-training. Staff who scored higher on the SLIS (i.e., staff who endorsed items reflective a higher value for social-learning ideology) displayed significantly less change in negative behaviors from Time 1 to Time 3. Consistent with findings predicting test performance and on-unit staff behaviors following training, negative behavior change appears to be one the most sensitive and predicted behaviors following staff-training.

Number of Years Working on the Unit

Interestingly, an increased number of years working on the psychiatric treatment unit was associated with a number of outcome variables. Staff with a greater number of years working performed less well on both the written and *in-vivo* exams as well as poorer on-ward behaviors at both Time 1 and Time 3. The unit was developed shortly before this training initiative took place. Many of the staff had been working on the unit for a number of years prior to the development of the program, when it was an acute-care unit for a mixed diagnosis group of patients, with no appreciable treatment philosophy or program other than standard medical model treatment with occasional recreational activities. It could that the longer staff are working in psychiatric care prior to a staff-training initiative, the more difficult it is for them to learn and implement new behaviors and skills, especially when those new behaviors and skills reflect a treatment philosophy

that is different than the one from which they have been operating. It may also be that 'time working on the unit' reflects a generational effect, in that the further back in time staff were trained, the more likely it is that they were exposed to a purely medical model view of treatment, and the longer they have been working within and been reinforced for doing so. It is also possible that older staff have more difficulty in learning new skills, or that they are less motivated to reorient themselves in their professional work. Further work is needed to determine the extent to which each of these factors is operative. In addition, findings from this study suggest that attention must be paid to developing training programs that are effective for changing the views and behaviors of 'veteran' staff.

Limitations of the Study

The results of this study demonstrated that a relatively brief, multi-component training program, including didactic and in-vivo segments, produced significant effects on staff behavior on a long-term, social-learning-based inpatient psychiatric rehabilitation program. The data also indicated significant effects of staff discipline on ward behaviors. These findings have implications for future staff training efforts. However, there were a number of limitations to the present investigation that must be taken into account.

First, the sample size was relatively small, and several subgroups (e.g., psychologists) were represented in very small numbers. Thus, in some cases, failure to find significant results regarding classes of behavior may have been due to lack of power. In addition, it was not possible to analyze for differences by discipline beyond the global distinction of medical vs. clinical. With larger sample sizes, it would have been possible

to examine finer distinctions, such as differences between social workers, psychiatrists, nurses, psychologists, occupational therapists, etc. A second methodological issue was that while behavior scores for each staff member for each category reflected total number behaviors in each category divided by the total number of observed behaviors for that staff member, these were not based on an equal number of observations for all staff members. Indeed, there was not equal time spent observing all staff. This reflects the reality of life on an inpatient unit, where nursing and mental health technicians spend much more time on the unit than do psychiatrists, social workers and psychologists. The latter groups typically have their offices off the unit and only are present on the unit to meet with specific patients or to run time-limited activities such as groups (some of which can take place off the unit). In contrast, nurses and mental health technicians are based on the unit and are there for their entire shifts, except for brief breaks. While averaging of scores corrects for these differences to some extent, it raises the issue of a greater reliability in the scores of staff members who are present on the unit more of the time, as these scores reflect a higher number of observations. Moreover, it is possible that the different amounts of time spent on the unit, and differences in ability to 'escape' from the stress of the unit (e.g., more for staff with offices off the unit), may lead to differences in staff behavior. In this way, for example, higher levels of negative behaviors among nurses may be an effect, not of nursing training or practice per se, but of increased job stress and/or the types of tasks that comprise their job description (e.g., working with patients on showering versus running groups).A third methodological issue relevant to this study was that there was no long-term follow-up of the effects of the training program. Assessing long-term follow-up is critical because it is not unusual to find

behavior changes immediately after a training experience, but it is much more difficult to maintain those changes over time.

A methodological weakness of the study was that the first group that received training was trained “live” with interactive demonstrations and instruction. The second group received training through watching the video-tapes generated from the original training. It is possible that the ‘higher quality’ of the training provided to the first group was responsible for their higher level of performance at Time 3, after all staff had been trained. That is, even though the second group that was trained demonstrated improvement after training, the continued improvement of the first training group after their training ended may have resulted from their being involved in a live and more interactive form of didactic training.

Future Directions

Despite the limitations noted above, this study demonstrated that it is possible to positively impact critical staff behaviors (e.g., to increase therapeutic behavior and to decrease negative behavior) with a relatively brief training program consisting of didactic and in-vivo phases with an evaluative component. However, more convincing and consistent evidence of these and other effects are necessary to impact clinical practice. Some suggestions are offered below.

Studies of these and other training methods that use larger sample sizes would be helpful. Of course, a limitation of doing these studies is that there are so few inpatient units that utilize a social learning program model. However, in the current climate where there is an increasing interest in “evidence-based treatment” (Kazdin, 2006), continued

demonstration of the positive effects of staff training in existing programs could lead to creation of additional programs where they do not currently exist.

A critical consideration in promoting the use of effective staff training strategies is the demonstration that as staff behavior changes, patient outcomes improve. Ideally, staff behavior changes would be associated with outcomes such as: greater reductions in symptoms and behavior dysfunction, shorter lengths of stay, increased discharge rates, longer community tenure prior to rehospitalization, etc. These are outcome indices that are often seen as most critical by hospital administrators. And, while there are many factors that affect these variables (e.g., discharge rate can be affected by the availability of residential options in the community), it has already been demonstrated that staff behavior during inpatient treatment is related to long-term outcomes post-hospitalization. For example, Coleman and Paul (2001) demonstrated that staff-patient ratios did not significantly predict unit effectiveness as indexed by net gain in discharge rates. However, taking into account the amount of positive staff attention received by patients significantly improved the prediction of community tenure by 36 percent and the net gain in discharge rates by 66 percent over staffing ratios alone. Amount of positive staff attention also accounted for the relationship between staffing ratios and community tenure. Of course, there is already overwhelming evidence that social learning programs improve outcomes for even the most severely disabled people with serious mental illness. Paul and Lentz (1977) and more recent demonstrations (see Corrigan & Liberman, 1994) have consistently demonstrated greater behavior change, higher discharge rates, lower relapse rates, and reduced need for medication when patients are treated in this model. Therefore, adoption of this model and the use of training programs to ensure fidelity to it

would seem to be the epitome of evidence-based practice. Efforts to increase the clinical application of training programs for staff working with patients with serious mental illness, or research studies of these programs, would benefit greatly from a standardized and user-friendly set of materials. To date, such materials do not exist. For example, although the data collection phase of the Paul and Lentz (1977) demonstration was completed over 30 years ago, computerized methods for using the observational assessment tools from that project still do not exist. As with the present study, staff training efforts typically are geared towards specific settings (e.g., the Second Chance Program), and no effort is made to make them applicable to other settings. Having a trainer's manual with a curriculum that includes interactive exercises, along with a set of videotapes that demonstrate various skills, and a manual and video guides for the in-vivo assessment (for both the trainer and the trainee) could promote wider adoption of effective training programs.

On a broader level, practitioners and hospital and agency administrators will be hesitant to invest in training programs for staff who work with seriously mentally ill people, to the extent that outcomes for this population continue to be seen as negative. Therefore, greater efforts are needed to educate those responsible for the care of people with serious mental illness that outcomes for this population do not have to be poor. In fact, the evidence indicates that: 1) when outcomes are poor, it is often due to lack of adequate treatment, or to treatment noncompliance and/or substance abuse; but that 2) where the environment supports recovery, outcomes can be positive in many cases (Silverstein, Spaulding, & Menditto, 2006). For example, Huber et al. (1975) followed-up 502 people with schizophrenia after an average period of 22 years. In this study, 26%

of the sample had achieved full recovery in both psychological and social functioning. Another 31% demonstrated significant improvement. These data led the authors to conclude that "Schizophrenia does not seem to be a disease of slow progressive deterioration. Even in the second and third decades of illness, there is still potential for full or partial recovery" (Huber et al. 1980). Similar results were found by M. Bleuler (1978) in a 20 year follow-up study of 208 people with schizophrenia. In the Iowa 500 study (Tsuang et al., 1979), 186 subjects retrospectively diagnosed using research criteria for schizophrenia were followed-up an average of 35 years later. In this sample, 20% were considered recovered, an additional 26% considered considerably improved, 21% were married, 12% were divorced, and 35% were employed. Ciompi (1980), in a review of data involving his 37-year follow-up study, reported that 20.1% of patients were completely recovered, 42.6% were improved, 29.8% were unchanged, 5.9% were functioning more poorly than at the initial assessment, and the fate of 1.7 of the patients was uncertain. Finally, Harding et al. (1987) followed-up a cohort of 269 patients who had been treated on the back wards of a state psychiatric hospital in Vermont in the 1950s for 20-25 years. For half to 2/3 of subjects who (retrospectively) meet DSM-III criteria for schizophrenia (N=82), long-term outcome was characterized by an evolution into various degrees of productivity, social involvement, wellness, and competent functioning; 68% of subjects displayed no signs or symptoms of schizophrenia at follow-up and 45% displayed no psychiatric symptoms at all. Eighty-four percent of patients were prescribed medication, but 50% were not taking any medication (34% noncompliant + 16% not prescribed). It is particularly interesting to compare these data to a later study in which the Vermont patients were compared to patients discharged from state hospitals in Maine.

Unlike Vermont, which in the 1950s, developed comprehensive community-based rehabilitation programming that was linked to state hospital census reduction, Maine did not, instead relying on medication and hospital based aftercare services, with little in the way of rehabilitation. In this follow-up study (DeSisto et al., 1995a,b), patients in Maine were matched to patients in the Vermont sample on baseline characeristics. During the follow-up period, Vermont subjects worked more, had fewer symptoms, and better community adjustment and global functioning than Maine subjects. In short, sufficient evidence now indicates that long-term outcomes for patients with severely disabling forms of serious mental illness can be positive over the long term, but that outcomes are likely to be relatively poorer occur in the absence of appropriate interventions. Educating future mental health practitioners and administrators early in their training about these findings may help change attitudes so as to increase the likelihood that effective treatment programs, and staff training methods to support and maintain them, are implemented.

Summary

This study demonstrated that there are differences in the nature of staff behaviors towards seriously mentally ill patients on a long-term, inpatient, psychiatric rehabilitation program. Moreover, it demonstrated that a staff training program involving didactic, interactive, and in-vivo components, along with written and in-vivo assessments of mastery, had positive effects on changing behavior. The greatest effects were noted for reductions in negative staff communications and behaviors, and increases in therapeutic communications and behaviors. For the half of the staff that were trained first, changes

in behavior continued to increase over several weeks, so that even though the group that was trained second improved relative to baseline, the group that was trained first demonstrated more appropriate behaviors towards patients even at the last observation point. This study also demonstrated the utility of written and in-vivo assessment of staff competency. Overall, the in-vivo assessment was the better predictor of staff, behavior, however. Limitations of the study, including the relatively small sample size and brief follow-up period are discussed. The importance of staff behavior towards severely mentally ill patients is also emphasized, as are some of the issues that need to be faced in efforts towards more widespread implementation of the type of training program used in this study.

CHAPTER SEVEN

Footnotes

1. The term social-learning program is being used in its most liberal sense, and for purposes of this review, will refer to psychiatric rehabilitation programs that are guided by a social learning theory ideology, and employ social-learning principles and procedures to varying degrees. The author acknowledges that in the strictest sense, social-learning programs are those that stringently follow the Paul and Lentz (1977) structure.

CHAPTER EIGHT

References

Ball, R. A., Mooore, E., & Kuipers, L. (1992). Expressed emotion in community care staff. A comparison of patient outcome in a nine month follow-up of two hostels. *Social Psychiatry & Psychiatry Epidemiology, 27,* 35-39.

Bellack, A. S., Schooler, N. R, Marder, S. R., Kane, J. M., Brown, C. H., & Yang, Y. (2004). Do clozapine and risperidone affect social competence and problem solving? *American Journal of Psychiatry, 161,* 364-367.

Bleuler, M. (1978). *The schizophrenic disorders: Longterm patient and family studies* (S. M Clemens, trans.). New Haven, CT: Yale University Press.

Buchanan, R.W. & Carpenter, W. T. (2005). Concept of schizophrenia. In B. J. Sadock & V. A. Sadock (Eds.), *Kaplan and Sadock's comprehensive textbook of psychiatry, 8th Ed.* (pp. 1329-1344). Baltimore: Lippincott Williams & Wilkins.

Butzlaff, R. L. & Hooley, J. M. (1998). Expressed emotion and psychiatric relapse: A meta-analysis. *Archives of General Psychiatry, 55,* 547-552.

Carpenter, W. T., & Gold, J. M. (2002). Another view of therapy for cognition in schizophrenia. *Biological Psychiatry, 51,* 969-71.

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

Coleman, J. C., & Paul, G. L. (2001). Relationship between staffing ratios and effectiveness of inpatient psychiatric units. *Psychiatric Services, 52,* 1374-1379.

Corrigan, P. W. (1994). Differences between clinical and nursing inpatients staff: Implications for training behavioral rehabilitation. *Journal of Behavior Therapy and Experimental Psychiatry, 25,* 311-316.

Corrigan, P. W., Kwartarani, W. Y., Pramana, W. (1992). Barriers to the implementation of behavior therapy. *Behavior Modification, 16,* 132-144.

Corrigan, P.W., & Liberman, R. P. (Eds.). (1994). *Behavior Therapy in Psychaitric Hospitals*. New York: Springer Publishing Company.

Corrigan, P. W. & McCracken, S. G. (1997*). Interactive Staff Training: Rehabilitation Teams That Work*. New York: Plenum Press.

Corrigan, P. W. & McCracken. S. G. (1999). Rehab rounds: Training teams to deliver better psychiatric rehabilitation programs. *Psychiatric Services, 50,* 43-45.

Corrigan, P. W., McCracken, S. G., Kommana, S., Edwards, M., & Simpatico, T. (1996). Correlates to staff perceptions about barriers to innovative behavioral rehabilitation programs. *Cognitive Therapy and Research, 20,* 541-551.

Corrigan, P. W., Steiner, L., McCracken, S. G., Blaser, B., & Barr, M. (2001). Strategies for disseminating evidence-based practices to staff who treat people with serious mental illness. *Psychiatric Services, 52,* 1598-1606).

Davis, K. E., (1985). *A survey of training of professionals to work with the seriously mentally ill in Virginia.* Paper presented at a State of the Art Conference on Chronic Mental Illness. Richmond, VA.

Davis, K.E., Rawana, E. P., & Capponi, D. R., (1989). Acceptability of behavioral staff management techniques. *Behavioral Residential Treatment, 4,* 23-44.

Dickerson, F. B., Dixon, L., Lehman, A. F. (2005). Schizophrenia: Psychosocial treatment. In B. J. Sadock & V. A. Sadock (Eds.), *Kaplan and Sadock's comprehensive textbook of psychiatry, 8th Ed.* (pp. 1456-1467). Baltimore: Lippincott Williams & Wilkins.

DeSisto, M., Harding, C. M., McCormick, R. V., Ashikaga, T., & Brooks, G. W. (1995a). The Maine and Vermont three-decade studies of serious mental illness. II. Longitudinal course comparisons. *British Journal of Psychiatry, 167,* 338-342.

DeSisto, M. J., Harding, C. M., McCormick, R. V., Ashikaga, T., & Brooks, G. W. (1995b). The Maine and Vermont three-decade studies of serious mental illness. I. Matched comparison of cross-sectional outcome. *British Journal of Psychiatry, 167,* 331-338.

Donat, D. C., & McKeegan, G. F. (1990). Behavioral knowledge among direct care staff in an impatient psychiatric setting. *Behavioral Residential Treatment, 5,* 95-10.

Franco, H. & Kelly, T. H. (1994). Obstacles in the implementation of a behavior therapy ward in a state psychiatric hospital. In P. W. Corrigan & R. P. Liberman (Eds.), Behavior Therapy in Psychiatric Hospitals (pp. 167-178). New York: Springer Publishing Company, Inc.

Glynn, S. & Mueser, K. T. (1986). Social-learning for chronic inpatients. Schizophrenia Bulletin, 12, 648-668.

Glynn, S. & Mueser, K. T. (1992). Social-learning programs. In R. P. Liberman (Ed.), *Handbook of Psychiatric Rehabilitation*, (pp. 127-149). Needham Heights, ME: Allyn and Bacon.

Gray, P. (1999). "Psychology" (3rd ed.). NY: Worth Publishers

Green, A. I., Canuso, C. M., Brenner, M. J., & Wojick, J. D. (2003). Detection and management of comorbidity in patients with schizophrenia. *Psychiatric Clinics of North America, 26,* 115-139.

Green, M. F., Kern, R. F., Braff, D., L., & Mintz, J. (2000). Neurocognitive deficits and functional outcome: Are we measuring the "right stuff." *Schizophrenia Bulletin, 26,* 119-136.

Harding, C., Brooks, G., Ashidaga, T., Strauss, J. S., & Breier, A. (1987). The Vermont longitudinal study of persons with severe mental illness, II: Long-term outcome of subjects who retrospectively met DSM-III criteria for schizophrenia. *American Journal of Psychiatry, 144,* 727-735.

Harvey, P. D., & Keefe, R. S. E. (2001). Studies of cognitive change in patients with schizophrenia following novel antipsychotic treatment. *American Journal of Psychiatry,*158, 176-184.

Heinssen, R. K., Hooley, J. M., Minarik, M. E., Israel, S., B., & Fenton, W., S., (submitted for publication). Expressed emotion in psychiatric hospital staff: It's not all relative.

Hollander, M. A. & Plutchik, R. (1972). A reinforcement program for psychiatric attendants. *Journal of Behavior Therapy and Experimental Psychiatry, 3,* 297-300.

Huber, G., Gross, G., & Schuttler, R. (1975). A long-term follow-up study of schizophrenia: psychiatric course of illness and prognosis. *Acta Psychiatrica Scandinavica, 52,* 49-57.

Huber, G., Gross, G., Schuttler, R., & Linz, M. (1980). Longitudinal studies of schizophrenic patients. *Schizophrenia Bulletin, 6,* 592-605.

Ilkiw-Lavalle, O. & Grenye, B. F. S. (2003). Differences between patient and staff perceptions of aggression in mental health units. *Psychiatric Services, 54*, 389-393.

Jones, N. T., Menditto, A. A., Geeson, L. R., Larson, E., & Sadewhite, L. (2001). Teaching social-learning procedures to paraprofessionals working with severely mentally-ill individuals in a maximum-security forensic hospital. *Behavioral Interventions, 16,* 167-179.

Kazdin A. E. (2006). Arbitrary Metrics: Implications for Identifying Evidence-Based Treatments. *American Psychologist*, 61, 42-49.

Keefe, R. S. E., Mohs, R. C., Bilder, R. M., Harvey, P. D., Green, M. F., Meltzer, H. Y., Gold, J. M., & Sano, M. (2003). Neurocognitive assessment in the clinical antipsychotic trials of intervention effectiveness (CATIE) project schizophrenia trial: Development, methodology, and rationale. *Schizophrenia Bulletin, 29,* 45-55.

Kirkpatrick, B. & Tek, C. (2005). Schizophrenia: Clinical features and psychopathology concepts. In B. J. Sadock & V. A. Sadock (Eds.), *Kaplan and Sadock's comprehensive textbook of psychiatry, 8th Ed.* (pp. 1416-1436). Baltimore: Lippincott Williams & Wilkins.

Kirkpatrick, D. (1976). Evaluation of training. In R. L. Craig (Ed.), *Training and Development handbook (2nd ed.).* New York: McGraw.

Knapp, M., Mangalore, R. & Simon, J. (2004). The global costs of schizophrenia. *Schizophrenia Bulletin, 30*, 279-293.

Kopelowicz, A., Wallace, C. J., Zarate, R. (1998). Teaching psychiatric inpatients to re-enter the community: A brief method of improving the continuity of care. *Psychiatric Services, 49,* 1313-1316.

Kuipers, E. & Moore, E. (1995). Expressed emotion and staff-client relationships: Implications for community care of the severely mentally ill. *International Journal of Mental Health, 24,* 13-26.

Kutchins, H. & Kirk, S. (1997). *Making us Crazy.* New York: The Free Press.

Lauriello, J., Bustillo, J. R., & Keith, S. J. (2005). Schizophrenia: Scope of the problem. In B. J. Sadock & V. A. Sadock (Eds.), *Kaplan and Sadock's comprehensive textbook of psychiatry, 8th Ed.* (pp. 1345-1354). Baltimore: Lippincott Williams & Wilkins.

Lauronen, E., Koskinen, J., Veijola, J., Meittunen, J., Jones, P. B., Fenton, W. S., & Isohanni, M. (2005). Recovery from schizophrenic psychosis within the Northern Finland 1966 birth cohort. *Journal of Clinical Psychiatry, 66,* 375-383.

Leff, J. (2001). *The Unbalanced Mind.* New York: Columbia University Press.

Lehman, A. F., Ward, N. C., & Linn, L. S. (1982). Chronic mental patients: The quality of life issue. *American Journal of Psychiatry, 139,* 1271-1276.

Levant, RF (2005). Graduate education in clinical psychology for the twenty-first century: educating psychological health care providers. *Journal of Clinical Psychology,* 6, 1087-1090.

Lieberman, F. (1987). Psychotherapy and the clinical social worker. *American Journal of Psychotherapy, 41,* 369-383.

Liberman, R. P., Kopelowicz, A., & Silverstein, S. M. (2005). Psychiatric Rehabilitation. In B. J. Sadock & V. A. Sadock (Eds.), *Kaplan and Sadock's comprehensive textbook of psychiatry, 8th Ed.* (pp. 1345-1354). Baltimore: Lippincott Williams & Wilkins.

Liberman, R. P., Mueser, K., T., Wallace, C., J., Jacobs, H., E., Eckman, T., & Massel, H. K. (1986). Training skills in the psychiatrically disabled: Learning coping and competence. *Schizophrenia Bulletin, 12,* 631-647.

Liberman, R. P., Nuechterlein, K. H., & Wallace, C. J., (1982). Social skills training and the nature of schizophrenia. In J. P. Curran & P. M. Monti (Eds.), *Social Skills Training: A Practical Handbook for Assessment and Treatment* (pp. 5-56). New York: Guilford.

Marwaha, S. & Johnson, S. (2004). Schizophrenia and employment: A review. *Social Psychiatry and Psychiatric Epidemiology, 39,* 337-349.

Martin, B. C. & Miller, L. S. (1998). Expenditures for treating schizophrenia: A population-based study of Georgia Medicaid recipients. *Schizophrenia Bulletin, 24,* 479-488.

Mechanic, D. & Aiken, L. H. (1987). Improving the care of patients with chronic mental illness. *New England Journal of Medicine, 317,* 1634-1638.

Meltzer, H. Y.& McGurk. S. R. (1999). The effects of clozapine, risperidone, and olanzapine on cognitive function in schizophrenia. *Schizophrenia Bulletin, 25,* 233-255.

Menditto, A. A. (2002). A social-learning approach to the rehabilitation of individuals with severe mental disorders who reside in forensic clients. *Psychiatric Rehabilitation Skills*, 6, 73-93.

Menditto, A. A., Baldwin, L. J., O'Neal, L., G., & Beck, N. C. (1991). Social-learning procedures for increased attention and improving basic skills in severely regressed institutionalized patients. *Journal of Behavioral Therapy and Experimental Psychiatry, 22,* 265-269.

Moore, E., Kuipers, L., & Ball, R. (1992). Staff-patient relationships in the care of the long-term adult mentally ill: a content analysis of expressed emotion interviews. *Social Psychiatry and Psychiatric Epidemiology, 27,* 28-34.

Morisse, D., Batra, L., Hess, L., Silverman, R., & Corrigan, P. (1996). A demonstration of a token economy for the real world. *Applied and Preventative Psychology, 5,* 41-46.

Motjabe, R., Nicholson, R. A., & Carpenter, B. N. (1998). Role of psychosocial treatments in management of schizophrenia. A metaanalytic review of controlled outcome studies. *Schizophrenia Bulletin, 24,* 569-587.

Niemeier, D. F. (1983). A behavioral analysis of staff-patient interactions in a psychiatric setting. *Western Journal of Nursing Research,5,* 269-281.

Patterson, E. T., Griffin, J. C., & Panyan, M. C. (1976). Incentive maintenance of self-help skill training programs for non-professional personnel. *Journal of Behavior Therapy and Experimental Psychiatry, 7,* 249-253.

Paul, G. L. (1988). *Observational assessment instrumentation for service and research – The Staff-Resident Interaction Chronograph: Assessment in residential treatment settings* (Part 3). Champaign, IL: Research Press.

Paul, G. L. & Lentz, R. J. (1977). *Psychosocial treatments of chronic mental patients: Milieu vs. social-learning programs (2nd ed.).* Cambridge: Harvard University Press.

Paul, G. L., McInnis, T. L., & Mariotto, M. J. (1973). Objective performance outcomes associated with two approaches to training mental health technicians in milieu and social-learning programs. *Journal of Abnormal Psychology, 82,* 527-532.

Paul, G. L., Stuve, P., & Menditto, A. A. (1997). Social-learning program (with token economy) for adult psychiatric inpatients. *The Clinical Psychologist, 50,* 14-17.

Poland J., Von Eckhardt B., & Spaulding, W. (1994). Problems with the DSM approach to classifying psychopathology. In G. Grahan & L. Stevens (Eds.), *Philosophical Issues in Psychopathology*. Cambridge: MIT Press.

Read, J., Mosher, L. R., & Bentall, R. P. (2004). 'Schizophrenia' is not an illness. In J. Read, L. R. Mosher, & R. P. Bentall (Eds.), Models of Madness (pp. 3-7). New York: Brunner-Routledge.

Repucci, N. & Saunder, J. (1974). Social psychology of behavior modification: Problems of implementation in natural settings. *Americal Psychologist, 29,* 649-660.

Rice, D. P., & Miller, L. S. (1996). The economic burden of schizophrenia: Conceptual and methodological issues and cost estimates. In M. Moscarelli, A. Rupp, & N. Sartorius (Eds.), *Handbook of Mental Health Economics and Health Policy* (pp. 589-638). New York: Wiley.

Richman, G. S., Riordan, M. R., Reiss, M. L., Pyles, D. A. M., & Bailey, J. S. (1988). The effects of self-monitoring and supervisor feedback on staff performance in a residential setting. *Journal of Applied Behavioral Analysis, 21,* 401-409.

Robinson, D. G., Woerner, M G., McMeniman, M., Medelowitz, A., & Bilder, R. M. (2004). Symptomatic and functional recovery from a first episode of schizophrenia or schizoaffective disorder. *American Journal of Psychiatry, 161,* 473-479.

Rogers, E. S., Cohen, B. F., Danley, K. S., Hutchinson, D. & Anthony, W. A. (1986). Training mental health workers in psychiatric rehabilitation. *Schizophrenia Bulletin, 12,* 709-719.

Rupp, A. & Keith, S. J. (1993). The costs of schizophrenia: Assessing the burden. *Psychiatric clinics of North America, 16,* 413-423.

Schretlen, D., Jayaram, G., Maki, P., Park, K., Abebe, S., & DiCarlo, M. (2000). Demographic, clinical, and neurocognitive correlates of everyday functional impairment in severe mental illness. *Journal of Abnormal Psychology, 109,*134-138.

Silverstein, S. M. (2000). Psychiatric rehabilitation of schizophrenia: Unresolved issues, current trends, and future directions. *Applied & Preventive Psychology, 9,* 227-248.

Silverstein, Hatashita-Wong, M., & Block, A. (2001). A second chance for people with "treatment-refractory" psychosis. *Psychiatric Services, 53,* 480.

Silverstein, S. M., Hatashita-Wong, M., Wilkniss, S., Lapasset, Block, A., & McCarthy, R. M. (2005). Gestion clinique et rehabilitation du patient souffrant deschizophrenie et refractaire au traitement: fondements conceptuels et resultats. *Sante Mentale au Quebec, 24,* 8-15.

Silverstein, S. M., Hitzel, H., & Schenkel, L. S. (1988). Rehab rounds: Identifying and addressing cognitive barriers to rehabilitation readiness. *Psychiatric Services, 49,* 34-36.

Silverstein, S. M., Menditto, A. A., & Stuve, P. (2001). Shaping attention span: An Operant conditioning procedure to improve neurocognition and functioning in schizophrenia. *Schizophrenia Bulletin, 27,* 247-257.

Silverstein, S. M., Schenkel, L., S., Valone, C., & Nuernberger, S. (1998). Cognitive deficits and psychiatric rehabilitation outcomes in schizophrenia. *Psychiatric Quarterly, 69,* 169-191.

Silverstein, S. M., Spaulding, W. D., & Menditto, A. A. (2006). *Schizophrenia: Advances in Psychotherapy: Evidence Based Practice*. Ashland, Ohio: Hogrefe-Huber.

Silverstein, S. M. & Wilkniss, S. M. (2005). At Issue: The future of cognitive rehabilitation in schizophrenia. *Schizophrenia Bulletin, 30,* 679-692.

Snyder, K. S. Wallace, C. J., Moe, K., Ventura, J., & Liberman, R. P. (1995). The relationship of residential care-home operators' expressed emotion ans schizophrenic residents; symptoms and quality of life. *International Journal of Mental Health, 24,* 27-37.

Sokal, J., Messias, E., Dickerson, F. B., Kreyenbuhl, J., Brown, C. H., Goldberg, R. W., & Dixon, L. B. (2004). Comorbidity of medical illnesses among adults with serious mental illness who are receiving community psychiatric services. *Journal of Nervous and Mental Disease, 192,* 421-427.

Spaulding, W. D. (1993). Spontaneous and induced changes in cognition during psychiatric rehabilitation. In: R. L. Cromwell & C R. Snyder (Eds.), *Schizophrenia: origins, processes, treatment, and outcome* (pp. 299-312). New York: Oxford University Press.

Spaulding, W., Johnson, D., & Coursey, R. (2001). Treatment and rehabilitation of schizophrenia. In M. Sammons & N. Schmidt (Eds.) *Combined Treatments for*

Mental Disorders: A guide to psychological and pharmacological interventions (pp. 161-190). Washington, D. C.: American Psychological Association.

Spaulding, W. D., Storms, L., Goodrich, V., & Sullivan, M. (1986). Applications of experimental psychopathology in psychiatric rehabilitation. *Schizophrenia Bulletin, 12,* 560-577.

Spaulding, W. D., Sullivan, M., & Poland, J. (2003). *Treatment and Rehabilitation for Severe Mental Illness.* New York: Guilford.

Spaulding, W. D., Sullivan, M., Weiler, M., Reid, D., Richardson, C., & Storzbach, D. (1994). Changing cognitive functioning in rehabilitation of schizophrenia. *Acta Psychiatrica Scandinavica, 90,* 116-124.

Spore, D. L., Smyer, M. A. & Cohn, M. D. (1991). Assessing nursing assistants' knowledge of behavioral approaches to mental health problems. *The Gerontologist, 31,* 309-317.

Tsuang, M. T., Woolson, R. F., & Fleming, J. A. (1979). Long-term outcome of major psychoses. I. Schizophrenia and affective disorders compared with psychiatrically symptom-free surgical conditions. *Archives of General Psychiatry, 36,* 1295-1301.

Tuominen, H. J., Tiihonen, J., Walbeck, K. (2005). Glutamatergic drugs for schiophrenia: A systematic review and meta-analysis. *Schizophrenia Research, 72,* 225-234.

Tuunainen, A., Wahlbeck, K., Gilbody, S. (2002). Newer atypical antipsychotic medication in comparison to clozapine: a systematic review of randomized trials. *Schizophrenia Research, 56,* 1-10.

Velligan, D. I., Prihoda, T. J., Sui, D., Ritch, J. L., Maples, N., & Miller, A. L. (2003). The effectiveness of quetiapine versus conventional antipsychotics in improving

cognitive and functional outcomes in standard treatment settings. *Journal of Clinical Psychiatry, 64,* 524-531.

Wallace, C., Liberman, R. P., MacKain, S., J., Blackwell, G., & Eckman, T. A. (1992). Effectiveness and replicability of modules for teaching social and instrumental skills to the severely mentally ill. *American Journal of Psychiatry,149,* 654-658.

Wasow, M. (1986). The need for asylum for the seriously mentally ill. *Schizophrenia Bulletin, 12,* 162-167.

Whitaker, R. (2002). *Mad in America: Bad Science, Bad Medicine, and the Enduring Mistreatment of the Mentally Ill.* Cambridge, MA: Perseus Publishing

Wilkniss, S. M., Silverstein, S. M., & Hunter, R. H. (2004). Nonpharmacologic treatment of aggression and violence in individuals with psychosis. Contemporary Psychiatry, 3, 1-7.

Appendix A

Staff-Training Powerpoint Presentation

(See attached; 31 pages)

Behavior Management of "Treatment-Refractory" Psychotic Patients

Second Chance Program

New York Presbyterian Hospital

February-March 2003

- At least 30% of patients exhibit an inadequate or poor response to conventional antipsychotic medication (Kane, 1989).
- Current estimate of 800,000 U.S. patients unresponsive to or intolerant of these drugs (Wirshing et al., 1999).
- Rate of clozapine response among conventional medication nonresponders ranges from 10%-60% (Kane, 1992; Kane et al., 1988; Simpson et al., 1999).
- 380,000-720,000 patients nonresponsive to current medications.
- Clozapine underutilized due to cost, side effects, and potential medical complications.
- Little evidence of clozapine-related improvement in work, social, or overall level of functioning among "treatment-refractory" patients (Wahlbeck et al., 1999).

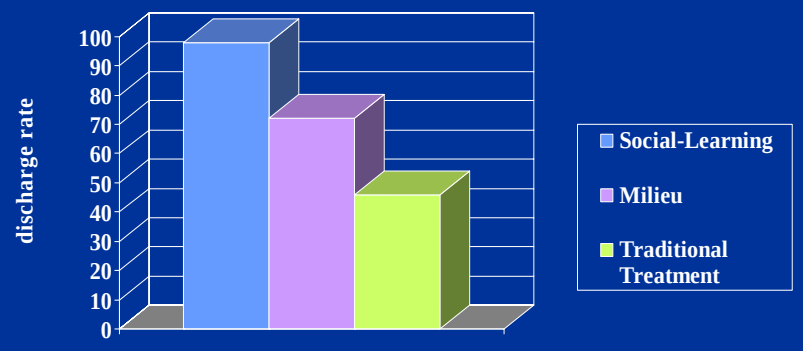
Best Practices for Inpatient Treatment of Severe and Persistent Mental Illness

- Token economies and incentive systems.
- Skills training groups.
- Individual behavior contracts.
- Use of extinction, prompting (*motivation, behavior, consequence, alternative*), and time-out from reinforcement as necessary.
- Frequent use of positive social reinforcement by all staff, during all shifts.

Components of Effective Milieu Treatment for Treatment-Refractory Schizophrenia

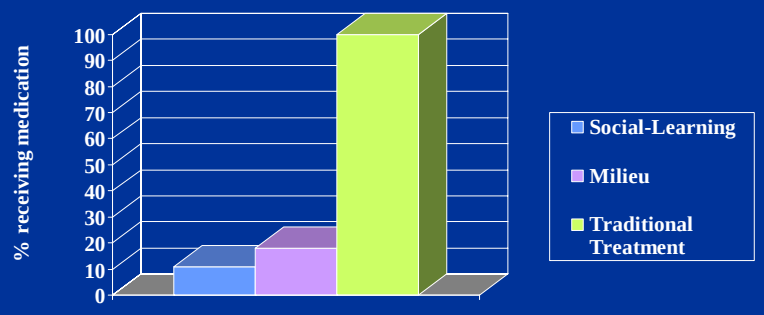
- Ward Level - Token economy, a prosthetic environment wherein consequences of behavior are immediate and clear, with gradual movement from external to internal control of behavior.
- Group Level - Skills Training, including grooming, bed and area, social skills, medication management, etc.
- Individual Level - Behavior contracts, individualized interventions, Every Interaction!

Practical Outcomes of a Long-Term Comparative Study : Discharge Rate



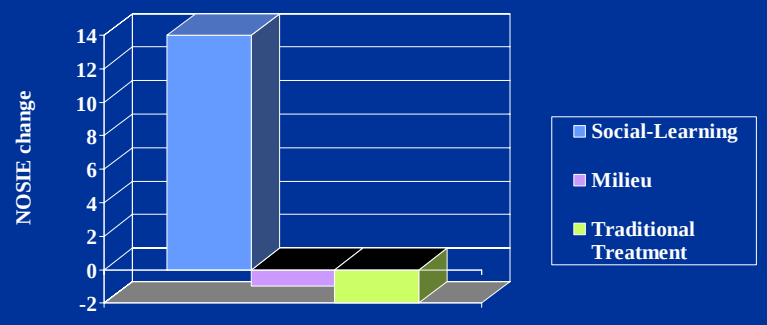
Paul & Lentz, 1977

Practical Outcomes of a Long-Term Comparative Study: % Receiving Medication at Discharge



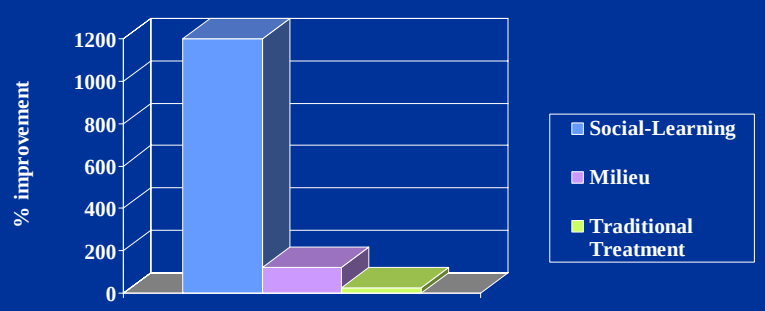
Paul & Lentz, 1977

Practical Outcomes of a Long-Term Comparative Study: Improvement in Ward Behavior (NOSIE-30)



Paul & Lentz, 1977

Practical Outcomes of a Long-Term Comparative: Improvement in Overall Functioning (Adaptive, Cognitive, Social, & Instrumental)



Paul & Lentz, 1977

Positive Behavior Checklist Categories

- Independent activity
- Interactive activity
- Starting a conversation appropriately
- Maintaining a conversation past opening greeting
- Ending a conversation appropriately
- Giving specific and appropriate feedback to peers
- Peer support
- Stress/conflict Tolerance

Why Haven't Our Recipients Learned Basic Social & Coping Skills?

Four Processes

COGNITION

Acquisition

↓

Performance

↓

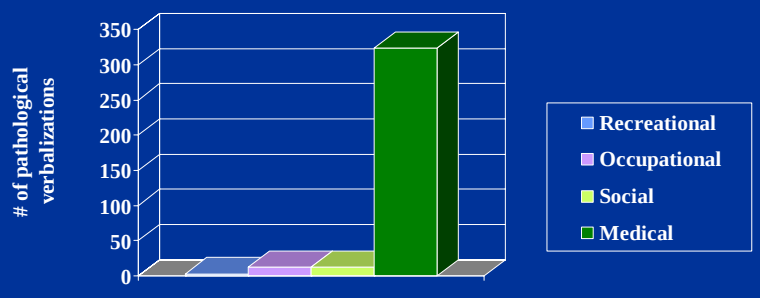
Generalization

Process Model of Psychiatric Rehabilitation

PROCESS	INTERVENTION
• ACQUISITION	• Skills Training
• PERFORMANCE	• Incentive Program
• GENERALIZATION	• Other Systems: – Families – Transfer Training
• COGNITION	• Cognitive Rehabilitation

Number of Verbal Responses Indicating Psychopathology as a Function of Room Décor Over a 10 Day Period

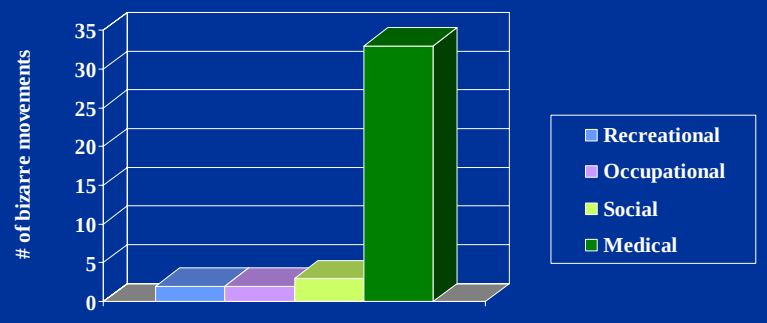
N=30



Zarlock, 1966

Number of Bizarre Physical Responses as a Function of Room Décor Over a 10 Day Period

N=30



Zarlock, 1966

Response Cost

Ratio of:

Total amount of reinforcement:
Total amount of punishment

Positive vs. Negative Consequences of Behavior

Punishment

- Positive punishment is when something happens to reduce the frequency of behavior (e.g., speeding ticket, extra work, etc.).
- Negative punishment is when something is removed, leading to reduced frequency of behavior (e.g., token fine, loss of privileges, etc.).

Reinforcement

- Positive reinforcement is when something is given to increase frequency of behavior (e.g., candy, money, praise, etc.).
- Negative reinforcement is when something is removed, leading to an increase in behavior (e.g., potential for an unpleasant event is removed, noise stops, etc.).

The A B Cs of Measuring Behavior

- Antecedents
- Behaviors
- Consequences

Behavioral Strategies for Addressing Dependent/Institutionalized and Provocative/Aggressive Behaviors

- Extinction (D/I)
- 3 Step Procedure (D/I or P)
  1) Validate feelings.
  2) Set limits, reality test.
  3) Suggest an appropriate alternative behavior.
- Time-Out (P)

3-Step Procedure

- Reflect intentions/feelings
- Provide Feedback
- Prompt for alternatives

Groups Offered

- Anger control
- Community Re-entry (CREP)
- Substance Abuse Management
- Social Skills Training
- Basic Conversation Skills
- Interpersonal Problem Solving
- Friendship and Intimacy
- Medication Education
- Cognitive Rehabilitation
- Spirituality Matters® (Nadine Revheim, Ph.D.)
- Recreation (e.g., sports, yoga, art, etc.)

- ATTENTION FOCUSED ON CLASS
  - Head up
  - Eyes open
  - Looking at trainer/video/role play
- ACTIVE PARTICIPATION IN CLASS
  - Verbally responds within 5 seconds
  - Responses are relevant
  - Responses are more than one word when indicated
  - Participates in role-plays
  - Makes spontaneous comments
- PARTICIPATION INTERFERING BEHAVIORS
  - Irrelevant vocalizations & gestures
  - Arguing, yelling, screaming, etc.
  - Staring off into space
  - Getting out of chair or leaving group

Negative-Positive Prompt Sequence

- Therapist uses this sequence when observing a participation-interfering behavior for the first time.
- Prompt begins with specification of inappropriate behavior and reference to the reinforcer
- For example: “Bob, you are talking out loud about things that aren’t related to our discussion. If you keep doing that you won’t be able to earn your participation token today. If you can get back involved with our discussion, you’ll still be able to earn your token.”
- Continued participation interfering behaviors are ignored
- Praise given when person gets back on-task

New York Presbyterian Hospital
Second Chance Program
APPEARANCE

Ward: 6 NORTH	S M TU W TH F S DATE: / /

CRITERIA
Hair combed. All clothing appropriate. Shaven/Appropriate make-up
Teeth brushed. Clothing buttoned, zipped, tucked. Showered this morning (**4 pts.**)
Clothing clean.

Staff:

NAMES (Alphabetically by Team)	Target	Target Met? (Y/N)	CRITERIA MET (DAY)	COMMENTS
Michael	6			
Louis	8			
Donald	8			
Reggie	7			
Winnie	8			
Frank	9			
Mitch	3			
Jocelyn	10			
Manlius	8			
Jesus	9			
Cletis	8			
Curtis	3			
Shedrick	8			
Josiah	5			
Tim	8			
Rachael	9			
Vonda	6			

New York Presbyterian Hospital
Second Chance Program
MEAL BEHAVIOR

Ward:	S M TU W TH F S DATE: / /

CRITERIA

On time.
Return tray properly.
No stealing or grabbing other people's food.
Clean clothing, face, and hands.
Courteous table manners.
Proper use of utensils and hands.
No sloppiness.
No gulping.
Appropriate interaction.
No over or under eating.

NAMES	Staff:			Staff:			Staff:		
	Tar-get	Target Met? (Y/N)	CRITERIA	Tar-get	Target Met? (Y/N)	CRITERIA	Tar-get	Target Met? (Y/N)	CRITERIA
Michael	8			8			8		
Cindy.	6			6			6		
Chuck	8			8			8		
Rafael	6			6			6		
Lucy	7			7			7		
Fred	7			8			8		
Miguel									
Joyce	7			7			7		
Hal	7			7			7		
Scott	8			8			9		
Debby	8			8			8		
David									

New York Presbyterian Hospital Second Chance Program **Socially Intolerable Behaviors**	Ward: 6 North S M TU W TH F S DATE: / /

NAMES (Alphabetically by Team)	TOUCH-ING OTHER PEOPLE Uninvited or unwanted touching regardless of intent, whether sexual, aggressive, etc.	VERBAL AGGRES-SION	PHYSICAL AGGRES-SION	STANDING CLOSE Standing or sitting too close to another person while talking, or getting too close in other situations	INAPPRO-PRIATE VERBAL CONTENT	BIZARRE BEHAVIOR	SOCIALLY INAPPRO-PRIATE NON-BIZARRE BEHAVIOR	INTRU-SIVE BEHAVIOR	TREAT-MENT NON-COMPLI-ANCE
Hope									
Lance									
Ladd									
Wick									
Kerrington									
Spanky									
William									
Alphonse									
Jermaine									
Mary									
Jennifer									
Alexander									
Zoltan									
Zenobia									
Asenath									
Louie									
Rich									

Points vs. Tokens

- Rewards for appropriate behaviors
- Leads to privilege gains
- Point levels reflect absolute level of performance

- Rewards for meeting prespecified behavioral targets
- Leads to token earnings
- Token earnings reflect ability to demonstrate incremental change

Second Chance Tokens

Second Chance

TOKEN

GOOD JOB!!!

Second Chance Tokens

Patients receive tokens on a daily basis for:

- ADL'S
- Morning Room Check
- Meal Behaviors
- Evening Appearance & Room Check
- Helping & Extra Effort
- Arrival to Group On-time
- Group Participation
- Staying for Duration of Group

Second Chance Tokens

Patients can "spend" tokens on:

- Daily Smoke Walks
  - 2 tokens per smoke walk
  - smoke walk privileges linked to points earned and patient levels
- Token Store Items
  - (over 50 items)
- Special Unit Events
  - trips to the local amusement park
  - picnics on hospital grounds
  - pizza and video unit parties

Techniques

token economy
high rate schedule
no punishers

staff attention
grades
group recognition
group extinction

self management

idiosyncratic internal & external control

↓

Strong external control: material reinforcers

↓

Social reinforcers

↓

Cognitive reinforcers

↓

normative control

Effective "One-on-One" Treatment Techniques

- Extinction
- Differential reinforcement
- Prompting sequences (intentions + consequences + alternatives)
- Time-out from Reinforcement
- Proper handling of seclusion/restraint episodes (e.g., no positive reinforcement)

Techniques for Management of Aggressive Behavior

- Activity programming
- Social skills training
- Differential reinforcement of other behavior
- Timeout from reinforcement
- Mild aversives
- Overcorrection
- Contingent restraint

Behavior Contracts

- Preceded by functional assessment of behavior: behavioral definition, when, where, antecedents, consequences, using data collection forms and cards.
- Contract in simple language.
- Duration of each contract not > 1 week.

Appropriate Considerations in Treating Behavior Disorders

Common Major Sxs	INSTIGATING INFLUENCES	Behavior
Hallucinations →	ANTECEDENT CONDITIONS: 1. Primary (trigger) 2. Secondary (setting) • Tertiary Conditions CONSEQUENCE CONDITIONS: 1. R+ or R- 2. Sensory Feedback 3. Other	→ Aggression
Delusions →		
Agitation/Mood Dysregulation →		
Cognitive Dysfunction →		

Observational (CABC) Data

Name Client: Date:

Name Observer: Time:

Context:

Antecedents:

Behavior:

Consequences:

Other Observations:

Multimodal Integrated Intervention Plan

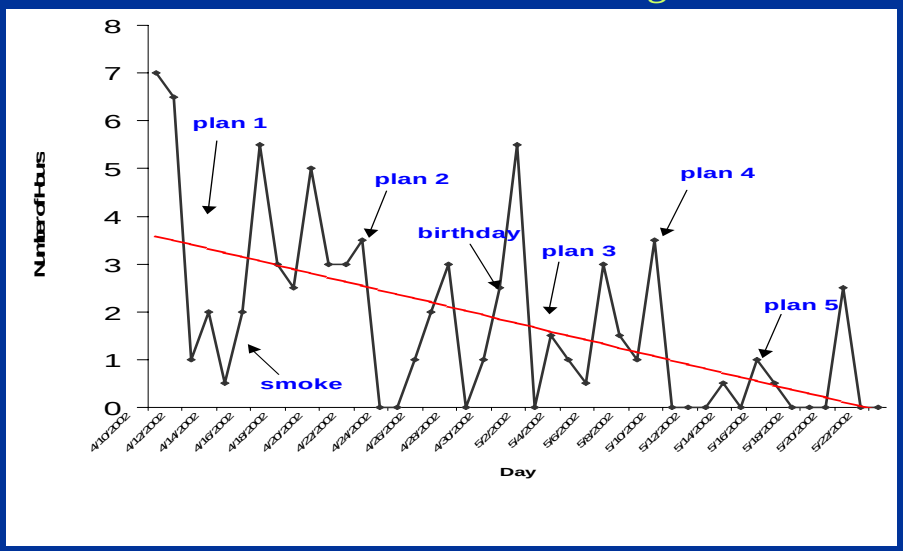
Target Symptoms

Client: _____
Record No: _____
Date: _____
Staff: _____

1. _____
2. _____
3. _____
4. _____
5. _____

	Diagnostic Hypotheses	Diagnostically-based Interventions	Staging Plan	Expected Change (Type/magnitude/time)	Data (Type/Schedule)	Responsible Staff; Review Schedule
Medical Formulations*						
Psychiatric Formulations						
Psychological Formulations						
Socio-environmental Formulations						

Change in Duration of Behavioral Dyscontrol with Behavior Contracting



Global Outcome Data - I

- 250+ admissions
- 80% of patients discharged to community (1 or more times)
- 68% of all patients ever admitted currently living in the community
- 32% of patients readmitted to state hospital after 1st or subsequent admissions

Global Outcome Data - II

- Mean LOS for discharged patients = 110 days *(compared to 7+ years in state hospital)*
- Median LOS for D/Cd patients = 87 days
- Mean LOS, 1st hospitalizations = 145 days
- Mean LOS, non-1st hospitalizations = 67 days
- 49% readmission rate
- Mean community tenure prior to readmission for readmitted patients = 176 days

Effect of Morning Medication Groups on Restraint Episodes

	1998	1999	Statistics
Mean number of patients per month	6.77	1.67	$t(8)=7.07$, $p<.001$
Mean number of episodes per month	17.89	4.00	$t(8)=6.02$, $p<.001$
Mean number of hours per month	66.89	17.67	$t(8)=4.71$, $p<.001$

Effect of Morning Medication Groups on Seclusion Episodes

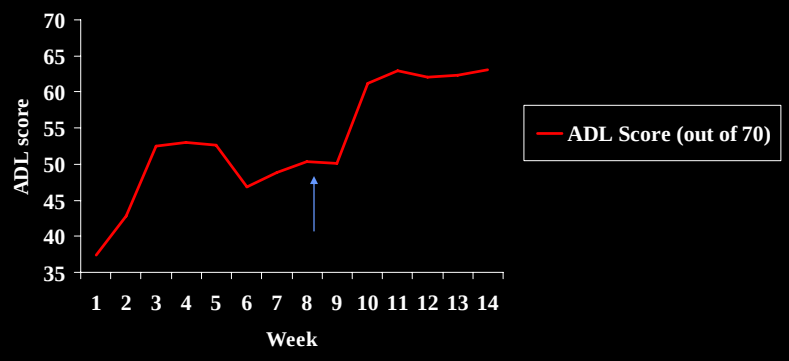
	1998	1999	Statistics
Mean number of patients per month	3.22	2.11	$t(8)=1.51$, $p<.17$
Mean number of episodes per month	9.33	3.44	$t(8)=3.08$, $p<.025$
Mean number of hours per month	25.78	13.67	$t(8)=2.13$, $p<.07$

Data Analytic Strategy for Longitudinal Analyses - I

- Repeated measures analyses, using performance score by week as repeated factor.
- Analyses based on maximum likelihood computations using a first-order autoregressive covariance structure.
- Effect of each week on overall model determined, followed by pre-incentive system vs. post-incentive system contrast.

Changes in ADL Performance After Introduction of Rating and Reinforcement Procedures

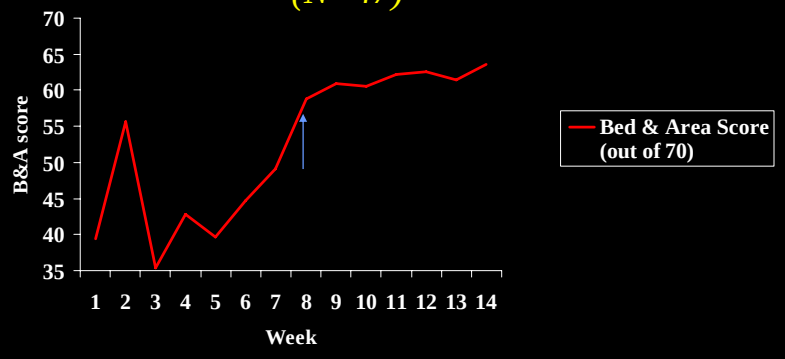
(N=45)



Week: Wald chi-square(13)=278.40, p<.0005)
Contrast (w1-7 vs. 8-14): Wald chi-square(1)=31.08, p<.0005

Changes in Bedroom Cleanliness Performance After Introduction of Rating and Reinforcement Procedures

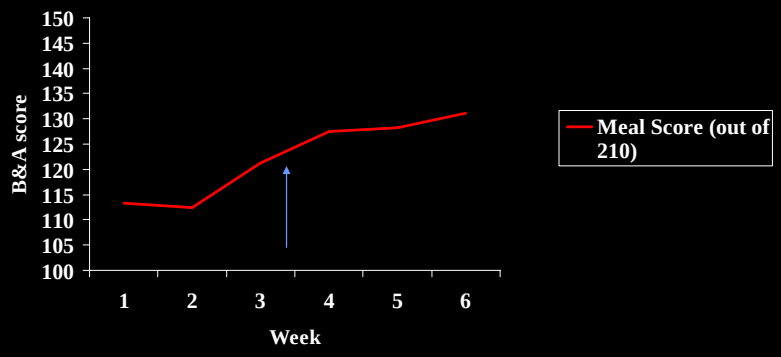
(N=47)



Week: Wald chi-square(13)=605.82, p<.0005)
Contrast (w1-7 vs. 8-14): Wald chi-square(1)=142.94, p<.0005

Changes in Meal Performance After Introduction of Rating and Reinforcement Procedures

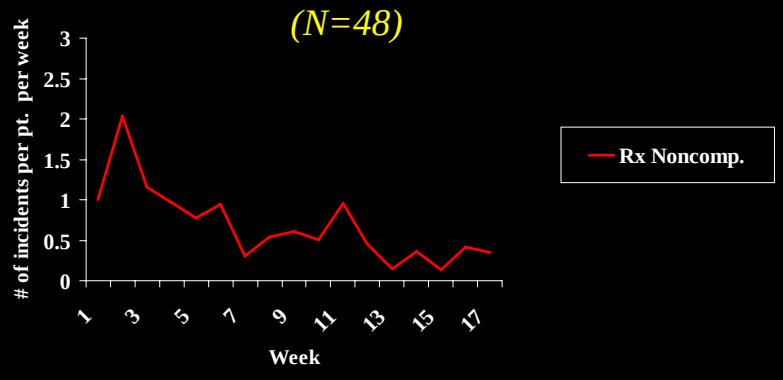
(N=38)



Week: Wald chi-square(5)=18.88, p<.005)
Contrast (w1-3 vs. 4-6): Wald chi-square(1)=7.48, p<.01

Changes in Treatment Noncompliance After Introduction of Reinforcement Procedures

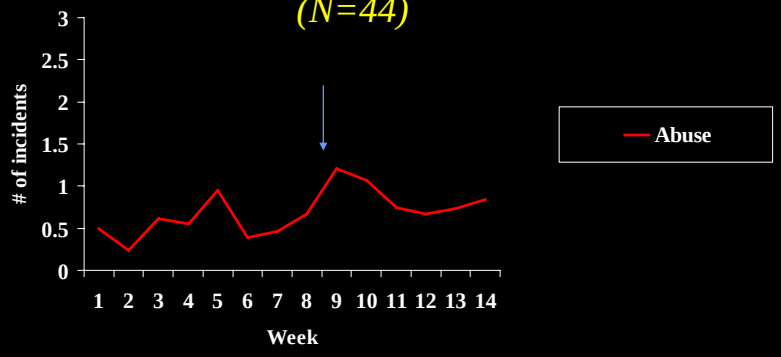
(N=48)



Week: Wald chi-square(16)=57.69, p<.0005)

Changes in Verbal and Physical Abuse After Introduction of Rating and Reinforcement Procedures (mean # per patient per week)

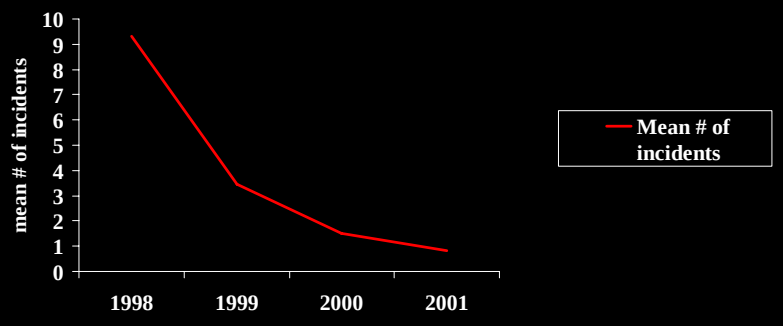
(N=44)



Week: Wald chi-square(13)=12.13, p>.51

Seclusion Room Incidents, By Month

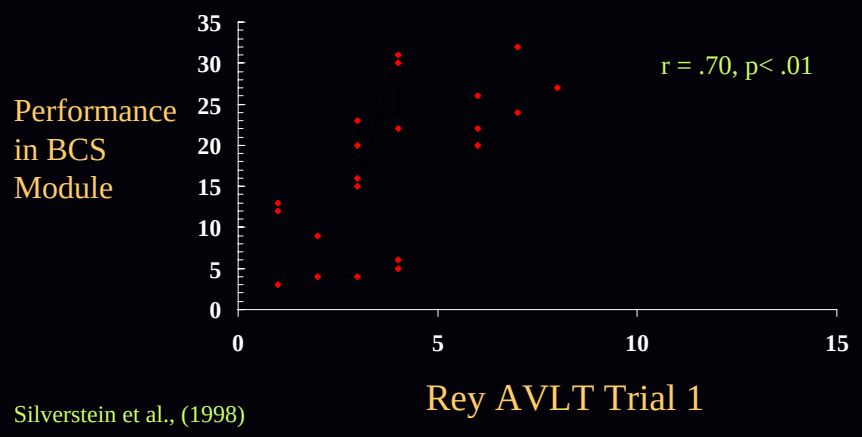
1998-2000



Relative Influences of Random and Fixed Effects in ADL Data

Effect	Estimates of Variance Components	Proportion of Total Variance Accounted For
PATIENT	23.40	**.19**
WEEK	63.43	**.50**
ERROR	39.36	**.31**

Relationship Between BCS Module Performance and Rey AVLT Trial 1 (N=21)



Silverstein et al., (1998)

Operant Conditioning and Cognitive Functioning in Schizophrenia

- Monetary reinforcement has been used to improve performance on laboratory tests of attention and executive functioning (e.g., Karras, 1968; Kern et al., 1995; Summerfelt et al., 1991).
- Operant procedures have increased attention span during brief, structured social interactions (e.g., Massel et al., 1991; Wallace & Boone, 1983).

Studies of Shaping as a Form of Cognitive Rehabilitation for Schizophrenia

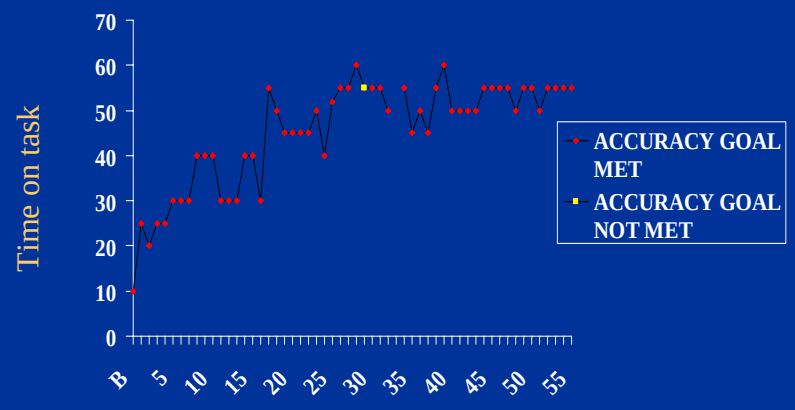
- Paul and Lentz, 1977
- Spaulding et al., 1986
- Menditto et al., 1991
- Silverstein et al., 1998, 1999
- Bellus et al., 1999

Recipe for Shaping

- Identify desired behavior (e.g., 20 minute attention span).
- Identify closest approximation that person can perform (e.g., 2 minute attention span).
- Initially, reinforce for baseline, and then, after several sessions, change criterion to reflect a small but meaningful increase (e.g., 3 minutes attention span).
- Fade reinforcers for earlier approximation (differential reinforcement).
- Repeat sequence until desired behavior is achieved.

Shaping Group Performance

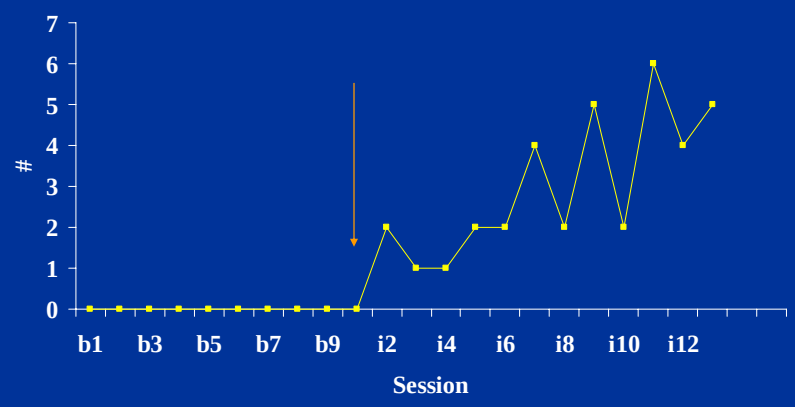
TS



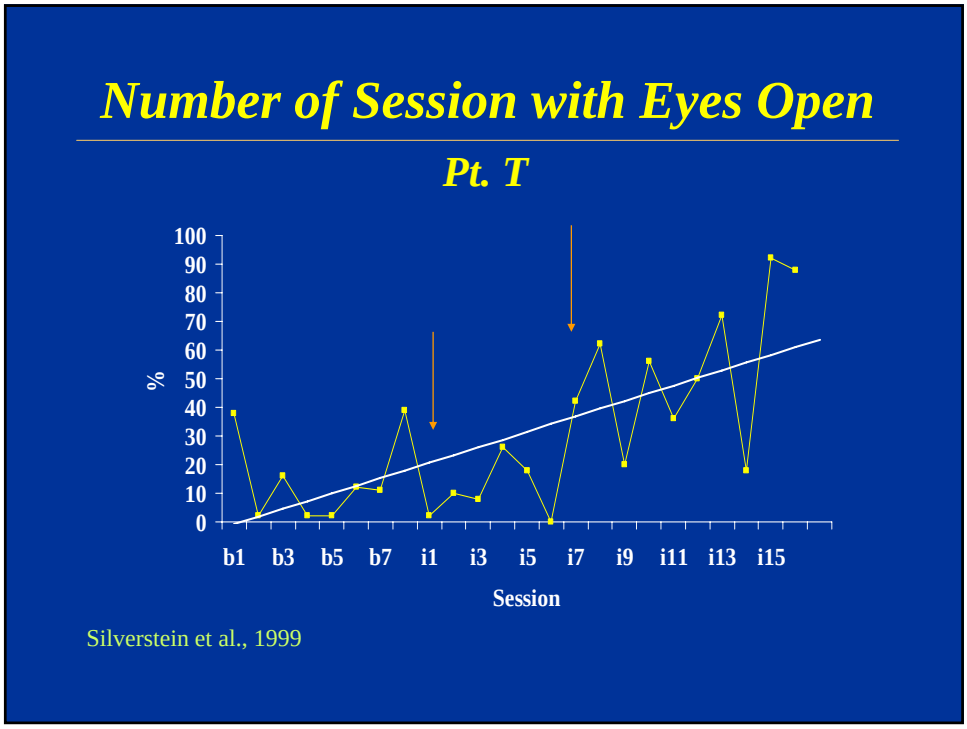
Silverstein et al., (1998)

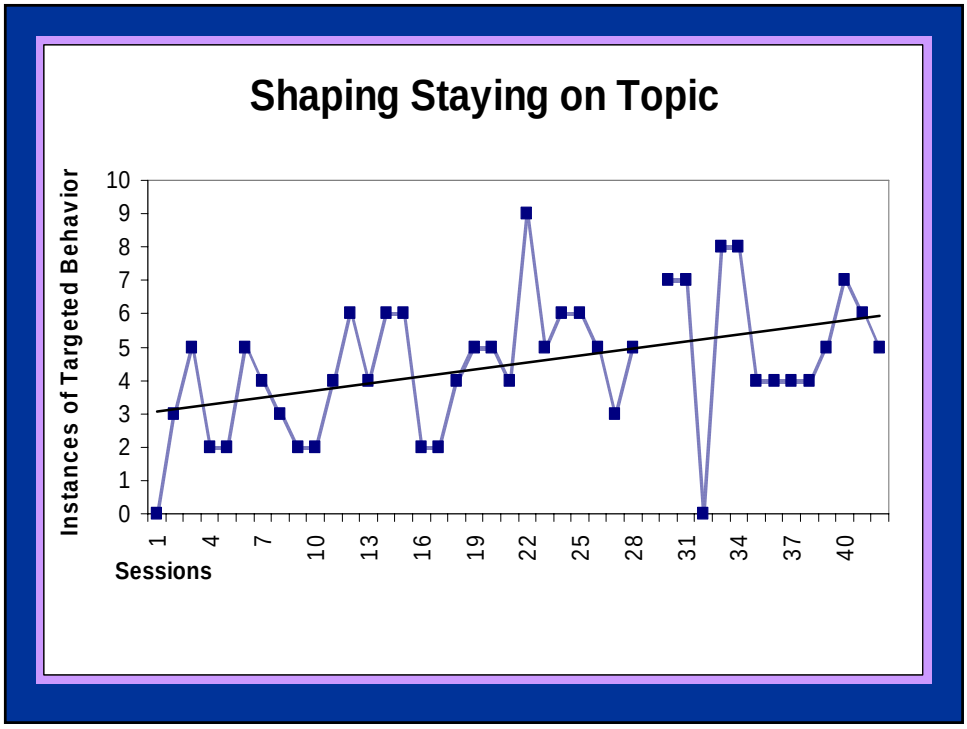
Number of Spontaneous Relevant Verbalizations

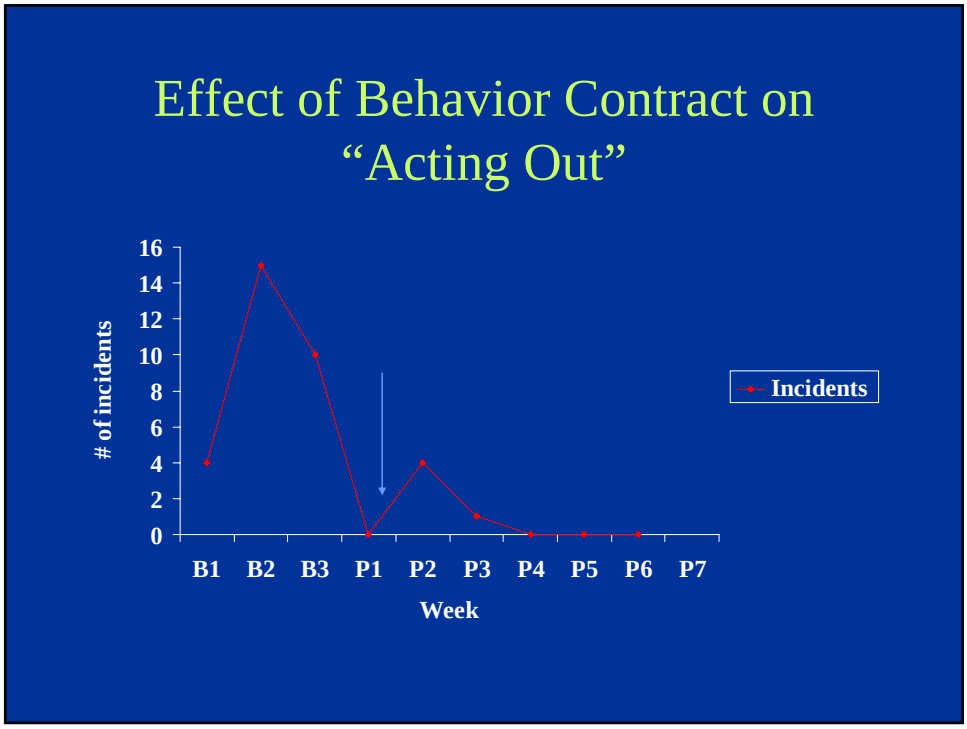
Pt. R



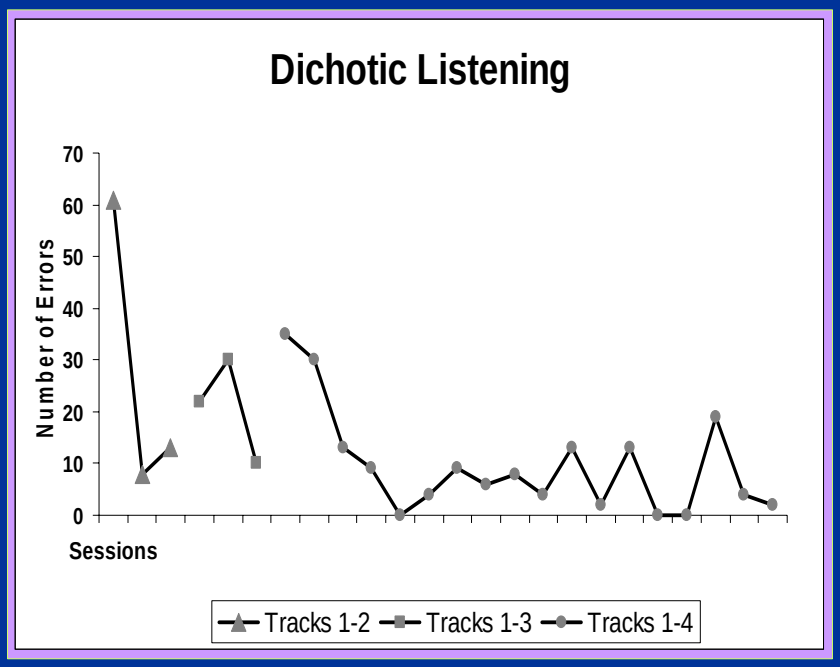
Silverstein et al., 1999


Number of Session with Eyes Open
Pt. T
100
90
80
70
60
50
40
30
20
10
0
%
b1
b3
b5
b7
i1
i3
i5
i7
i9
i11
i13
i15
Session
Silverstein et al., 1999


Shaping Staying on Topic
Instances of Targeted Behavior
10
9
8
7
6
5
4
3
2
1
0
1
4
7
10
13
16
19
22
25
28
31
34
37
40
Sessions


Effect of Behavior Contract on
"Acting Out"
16
14
12
10
8
6
4
2
0
# of incidents
B1
B2
B3
P1
P2
P3
P4
P5
P6
P7
Week
Incidents

"Dies y neuve, vente-ocho, siete, vente-uno"
"Seventeen, four, fifty-six, twenty-two"
"Nine, thirty-five, sixty-one, seven"
(Target stimuli)



Conclusions - I

- "Treatment-refractory" patients CAN respond to treatment.
- The most successful treatment paradigm for this population is a milieu-based behavioral program.
- Patients' behavioral skills, excesses, and deficits should be continually assessed and made the primary focus of treatment.
- Interventions should be at the ward, group, and patient level.

Conclusions - II

- Modeling treatment response at the group level misses important information about patient variability.
- Modeling at the level of the individual patient first can provide important information about treatment effects.
- Subgroups and single patients can be identified that need more individually tailored interventions.
- Individualized cognitive rehabilitation interventions and/or behavior contracts are often required.

Appendix B

Staff-Resident Interaction Fidelity Scale (SRIFS)

Date: _____ circle one: **No GROUP** **GROUP**

Observation time: begin:_____ end:_____

STAFF BEHAVIOR CATEGORY		John Doe	Sally Ann	Sara Park					
POSITIVE VERBAL	I								
	R								
NEUTRAL VERBAL	I								
	R								
NEGATIVE VERBAL	I								
	R								
POSITIVE NONVERBAL	I								
	R								
NEGATIVE NONVERBAL	I								
	R								
HIGH EE VERBAL	I								
	R								
QUESTION POS/NEUT	I								
	R								
QUESTION NEGATIVE	I								
	R								
POS GROUP REFERENCE	I								
	R								
NEG GROUP REFERENCE	I								
	R								
VALIDATE/ REFLECT	I								
	R								
STATE REALITY	I								
	R								
ELICIT ALTERNATV	I								
	R								
SUGGEST ALTERNATV	I								
	R								
ACTIVITY DEMAND	I								
	R								
DOING WITH	I								
	R								
DOING FOR	I								
	R								
POSTPONE									
PHYSICAL FORCE									
IGNORE/NORESPONSE									
IGNORE as EX or DR									
PAPERWRK	5 min								
OBSERVING									
CONVO OTHR STAFF									
INSTRUCT/ GIVE INFORMATION	I								
	R								

Appendix C

Staff-Resident Interaction Fidelity Scale (SRIFS) Scoring

Descriptions and examples of each of the SRIFS behavioral coding categories
(all examples were taken from actual staff behaviors on the Second Chance Program)

Positive Verbal

Positive and/or encouraging statements or comments; giving praise, compliments, positive feedback; positive reinforcement; good wishes, etc.

Examples:

- Hello; hi
- Great; good; good job; awesome; super (stated in positive tone - can be referring to situations or behaviors)
- Good to see you
- Laughing with patient (also code "Positive Nonverbal")
- Good to see you up and doing something in your spare time (*NOTE - if activity defined more specifically and in the context of treatment, "State Reality" would also be coded)
- Yes (must be stated in a positive way - i.e., if in agreement)
- That is something to look forward to
- Welcome to the unit
- It will take some time to get use to everything here; just take your time to get use to things here (as part of an initial conversation – not stated as a reflection of patient indicating distress)
- It's O.K., it's over; today is a new day (in response to patient stating that he/she is sorry for acting out the day before)
- You have made great gains here; you have made a lot of progress (referring to making progress in treatment)
- It's nice to see that you are up and moving around and helping out with things (also coded as "Validate/Reflect")

Neutral Verbal

Neutral statements or comments, conversation fillers, etc. (casual conversation statements that are not therapy/treatment related – if lasts more than five minutes, it is also coded as "Doing With").

Examples:

- I didn't see your name before, that's my fault.
- O.K.; um hum; uh huh; O.K. then (in a neutral tone of voice, as part of conversation filler)

- I heard everyone clapping this morning in community meeting, but I didn't know what it was about.
- I'm not sure about that
- That is a popular game
- My brother likes to play that
- That is the kind of music I like to listen to in the summer
- I went to the baseball game last week; my brother saw that
- I can't say that I have
- Let's see here

Negative Verbal

Any statement or comment given in a negative, sarcastic, or condescending tone; harsh or critical statements; reprimands.

Examples:

- (stated in negative tone) no; oh no you are not; that's what you think
- (in response to patient asking question such as "can I have a cigarette please?") no you can't! You already had one! (also coded as "High EE")
- Being an addict like you are is a tremendous risk
- That is a lousy idea
- (stated in negative tone) If you can't lower your voice like a normal person, you'll have to get a time out
- (sarcastic tone) what's today? Is today Thursday? It's Friday, you know we do that on Thursday (also coded as "Negative Question").
- You're a mess; you look a mess
- Your not getting up and your not cleaning your room (negative tone)
- You're walking in the wrong direction. That is not toward group (as a means of telling the patient to go to group).
- Don't ask me, I didn't see what happened (coded along with "Postpone")
- You don't help your cause by doing stuff like that
- Calm down and relax, your being inappropriate
- It was you who decided to do that , not me
- Go clean your room
- Get over here
- What (negative tone)
- Stop interrupting people
- Leave, the dining room is closed
- You have eaten enough, no more for you! (also coded as "high EE")
- Those are the rules and that is all there is to it
- Shut up
- If you don't get back in group, your not smoking
- If you can't be quiet, I'm going to put you on a tray and put you out in the rain
- When I tell you to do something, you do it.

- If you can't behave on the unit, then you don't belong on the unit.

Positive Nonverbal
Any positive nonverbal action: smiles; friendly gestures, positive intonation in utterance, positive physical contact.

Examples:
- Head nodding
- Smiling
- Waving hello
- Giving token (*NOTE - staff must be making eye contact while giving token out and must acknowledge patient in a therapeutic way)
- Laughing with patient (also code "Positive Verbal")

Negative Nonverbal
Any negative nonverbal action; frowns; grimaces; negative intonation in utterance; negative gestures.

Examples:
- Frowning; grimacing; scowling
- Waving a patient away; putting hand up to patient (may also be coded as "Postpone" if in the context of implying that patient move away or stop interaction)

High EE Verbal
High expressed emotion - coded when a statement or question contains an excess of emotion: yelling; using harsh, negative tone; speaking on a loud and/or pressured way.

Examples:
- No!
- Get away from there!
- (yelling down hallway to patients) Get to group!
- Clean your room!

Question Positive/Neutral
Any question stated in a positive or neutral way.

Examples:
- How are you?
- How are you doing?
- How are you feeling?
- How have you been sleeping?
- What did they ask you on your interview?
- Do you know what to say when they ask you that?
- Have you eaten? Are you eating dessert?

- When are you going to be discharged?
- What do you think all that means for you?
- How does all that come together and effect how you are doing and how you are functioning? (may also be coded as "elicit alternative" if in the context of exploring alternative ways of thinking about one's behavior and it's relationship to mental illness and/or treatment)
- Did they explain the level system to you?
- Do you brush your teeth everyday?
- Do you know what medications you are on?
- What games do you like to play?
- Are you thinking of being discharged to your mother's house?
- Do you know where you are? Do you know what hospital this is?
- Are you feeling better now that you are up and participating in group (also code as "Validate/Reflect")
- Would you like to talk for a while?
- Do you have a watch with a second hand? (in the context of suggesting that a patient time his/her responses in order to stay focused during a future conversation)

Question Negative
Any question stated in a negative way.

Examples:
- What do you want?
- What now?
- Huh?
- Do I look like your mother?
- Are you listening to me?
- Is something wrong with you?
- Do you hear me! (also coded "High EE")
- You got that?

Positive Group Reference
Any "Positive Verbal" stated to a group of patients.

Examples:
- Everyone did a good job
- Congratulations everyone
- Good job (to group of people)

Negative Group Reference
Any "Negative Verbal" stated to a group of patients.

Examples:

- If you don't line up here, your not going out on smoke break
- Get away from the nursing station
- You all know better than that

Validate/Reflect

Any statement that reflects what the patient is conveying or feeling (can be validations or reflections on speech or behavior); repeating or paraphrasing in a therapeutic way.

Examples:

- I understand what your saying; I can see that
- I see that you are feeling upset over that
- I can see that you are getting frustrated
- You look happy today
- I can see that you would like to talk to me; It looks like you would like to talk
- It sounds like you would like to change your discharge plan
- It sounds like you enjoyed that
- Right, so you were placed there after you were discharged
- I understand your father came to see you yesterday, how did it go? (also coded as "Pos/Neut Question")
- I know that you returned the book I lent you and I appreciate that (also coded as "Positive Verbal")
- It's nice to see that you are up and moving around and helping out with things (also coded as "Positive Verbal")
- Yes, you are up and around a lot more, that is true
- It's good to see you participating in group (also coded as "Positive Verbal")
- I know that you mentioned that visiting your mother's house can be stressful for you
- You seem to be doing pretty well
- I know that you want to leave here
- I know it can be frustrating; we understand your frustration
- (in response to patient indicating he has been doing better) I know your thoughts have been clearer and your ADL's have gotten a lot better and that's good (also coded as "State Reality" and "Positive Verbal")
- It is frustrating if you are not able to go
- I can see that you don't agree with me; I can see that you would like to stop talking

State Reality

Framing the reality of a situation to the patient; stating/indicating the consequences of a behavior in a clear, specific, and therapeutic manner; clear and specific statements indicating what the consequences are for a behavior (specifically or in general) – stated in a manner that the patient can understand.

*NOTE - in groups and rounds state reality is coded under initiate when points and levels are given out. In groups and rounds when therapeutic statements are made in response to a patient's behavior "State Reality" is coded under reply. Also, if High EE is present,

then also code as “High EE.” If tone of voice is negative, then also code “Negative Verbal.”

Examples:

- When you yell on the unit it is disruptive
- You will lose points for yelling on the unit
- You are unable to go out on smoke break because you are on restriction
- You are being restricted because you missed medication group today
- Whether or not you go to Rye Playland depends on what your points are next week.
- If you make level 4 or level 5, you will be eligible to go on the trip
- You say that you haven’t bee arrested, but your chart indicates that you have had some trouble with the law in the past year
- I understand that you have been hearing voices lately, you have been seen talking to your self (also coded as “Validate/Reflect”)
- If you leave group early, you will loose points
- If you attend the group, you will earn extra points
- The level 5 people get to go out on smoke break unescorted
- We want patients to learn to do things for themselves; we don’t want you have to depend on staff to take care of your daily needs
- Sometimes during interviews, people may say things that you don’t like
- Your thoughts are our own, you have your own thoughts (in response to patient asking if his thoughts were his own or if someone was implanting them)
- Taking the medication will help you with your thoughts
- We are changing the topic of conversation now; the topic of conversation has changed
- I’m not putting thoughts into your head, I am trying to understand the situation better by asking you questions about it
- It is going to take a while for you to feel the effects of the medication
- They don’t give points for attending that group
- You lost points for not combing your hair today
- He won because he has four points and you have two points
- I am talking to “x” now, but I will talk to you in just a bit, when I’m done (also coded as “Instruct/Give Information”)
- You have been here for a while and made a lot of progress (also coded as “Positive Verbal”)
- You met your goal, you said eight words (*NOTE - must indicate how goal was met)
- You are earning extra points for participating in an activity
- It has been hard for you to stay in control lately
- You have been getting upset quite often
- You may want to talk to your social worker about getting better shoes because it is getting warm out and your boots are looking very old (also coded as “Instruct/Give Information”)

- People tend to get frustrated when you talk about the same subject over and over again
- That coat is inappropriate for the weather, it is 70 degrees outside
- You are level 5, if you don't go to rounds, you'll lose your level
- I know your thoughts have been clearer and your ADL's have gotten a lot better and that's good (also coded as "Validate/Reflect" and "Positive Verbal")
- You can work toward the next trip (to the Bronx Zoo) by building up your points
- Other people can't steal your thoughts or tell what you are thinking. He is sniffling his nose because he has a runny nose, not because he wants to drown you and send you to the devil
- Flicking the lights is disruptive to other people and you will lose points for doing it
- If you don't go back into medication group, we will mark that off as treatment noncompliance.
- When you stop your medications, your symptoms come back; In the past when you stopped taking your medications, your symptoms came back and you ended up in the hospital; your chances of staying out of the hospital are better when you take your medication
- Learning good conversation skills is important because there can often be problems when people talk to each other and have difficulty understanding what is being said

<u>Elicit Alternative</u>
Prompting patient (in a therapeutic manner) to think about or consider alternative actions, behaviors, or ways of thinking – prompting patient to explore options. The goal of the statement is to help patients develop alternatives on their own.

Examples:
- What are some other things you can think of doing to earn points?
- Can you think of anything else you can do while you are waiting for us to meet?
- What might be some other ways to get my attention instead of "X"?
- It might be beneficial to consider other options for discharge, what might some other options be?

<u>Suggest Alternative</u>
Suggesting alternative actions/behaviors, ways of thinking, or ways of interpreting behavior – suggesting options for patient to explore.

Examples:
- Maybe that is something you can learn to do in your spare time (only coded "Suggest Alternative" if staff member came up with the alternative – not patient).
- Maybe that is something we can help you to learn
- You might want to stop yourself after 10 seconds of answering a question (in the context of helping patient develop strategies of how to stay focused during a conversation)
- Maybe you can get in line for a second snack after everyone has already had a chance

- You can ask “X” what your schedule is
- Listening to music is one thing that might help you when you are feeling stressed
- We have different options for discharge, you can consider “X” and you can also consider “Y”
- Something to think about is that plan “Y” might give you a little more freedom and independence
- Are you sure you don’t want to take that jacked off, its getting hot (also coded as “Instruct/Give Information”)

Activity Demand

Any request or demand requiring the patient to perform some sort of activity. Can be stated in a positive or negative way. (*NOTE - if stated in a negative, harsh, or abusive manner “Negative Verbal” and/or “High EE” is also coded. Activity demands framed in the form of questions (but intended as a requests) are coded as activity demands (i.e. “can you stop doing that please”).

Examples:

- Go and clean your room
- Lets take a walk down the hallway and talk
- You need to go and take your medication now
- Come here, I need to check your vitals
- Please don’t do that anymore
- I’m going to ask that people not talk during the song
- Can you please study on this side
- Please welcome our new patient to the unit and hive him a hand (also coded as “Positive Nonverbal” and “Positive Verbal”)
- Calm down and relax, your being inappropriate (also coded as “Negative Verbal”)
- Lower your voice
- Please keep something on your feet
- You have to stay in your pajamas
- Give this back when you are finished
- You have to get a haircut
- This area is closed, you have to leave (also coded as “Instruct/Give Information”)
- You need to take your coat off
- You need to go to rounds

Instruct/Give Information

Statements of specific instruction or advice that are not “Activity Demands” or “State Reality.” Relaying information to patients.

Examples:

- Yes/no responses (e.g., to “do we have group today?”)
- You have to take responsibility for that

- I am a social worker on this unit
- You need to worry about yourself
- We have a new patient from Bronx Psychiatric Center
- I want to let everyone know a few things about this weekend
- The levels this week will be on Thursday
- The trip to the zoo will be in August
- We are going to try to get you to the dentist next week
- There are a lot of rules on this unit
- There is no group today
- We will see how things go on the medication you are on
- (during relaxation group) I'm going to turn out the lights because that can help people relax
- We are trying to better understand what types of things we can help you with
- A lot of people around here play cards

Doing With

Participating in an activity with patient (the level of interaction may vary). "Initiate" is coded if staff initiates the activity, "respond" is coded if patient initiates activity.

Examples:

- Playing games with patients (cards, chess, etc.)
- Engaging in conversation outside of that which is required: conversation about recent happening; conversation focused on patient's behavior/functioning; casual conversation with patient (does not include conversations centered around intake interviews, medication consults, discharge planning, etc.).
- Looking at schedule with patient
- Casual conversation with patient

Doing For

Provides a specific service without patient's assistance (*NOTE - only coded for things that the patient would be able to do on his or her own).

Examples:

- Telling when groups are (as opposed to going with patient to look up on the board)
- Calling and/or contacting someone the patient would be able to contact themselves
- Telling patient the time of day or the date

Postpone

Statements or comments that postpone, delay, or suspend an interaction in response to a patient initiating an interaction without specifying another time to interact/converse.

Examples:

- I don't have time to talk
- I can't meet with you

- I can't look at that now
- I'll have to talk to you later
- I'm busy now
- Don't bother us (also coded as negative verbal)

Physical Force
Any forceful activity including pulling, shoving, dragging, or pushing; physical restraint.

Examples:
- Taking telephone out of patient's hand
- Grabbing patient by the arm and taking him/her to another place

Ignore/No Response
Failing to acknowledge or answer patient, turning and leaving during conversation, failing to acknowledge an action.

Ignore as Extinction or Differential Reinforcement
Ignoring a patient's behavior after an appropriate prompt as part of treatment (i.e., extinction or differential reinforcement).

Examples:
- Ignoring patient flicking on and off lights
- Ignoring a patient asking repetitive questions

Paperwork (coded over 5-minute intervals)
Staff in nursing office doing paperwork or medicine preparation.

Observing (coded over 5-minute intervals)
Staff observing patient's on unit; Patient checks (checking on patients).

Conversation With Other Staff (coded over 5-minute intervals)
Engaged in conversation with other staff member(s).

APPENDIX D

BEHAVIOR MANAGEMENT TRAINING FOR 2ND CHANCE PROGRAM STAFF
Written Exam

1) Which of the following are NOT ethically appropriate uses of reinforcers and punishment in a token economy system (circle all that apply)?

   a) A patient who repeatedly hurts staff has all of his clothing removed and must stay completely naked until he demonstrates appropriate social interactions, when each appropriate interaction earns him one article of clothing back.
   b) An aggressive patient who does not respond to a behavior contract has his bed removed from his room, and must go one full day without violence in order to earn his bed back.
   c) A verbally abusive patient is forbidden from eating lunch unless she apologizes to all staff about her behavior that morning.
   d) All staff completely ignore all comments of a thought disordered patient, except for his comments that make sense.

2) Which one of the following is an example of positive reinforcement?

   a) giving praise for every 5 minutes a restless patient stays in a group.
   b) Removing a unit restriction for a patient who has gone an entire day without doing XXX (i.e., the target problem behavior).
   c) giving a patient a cigarette because you had an extra one.
   d) letting a patient stay up late because you feel like being nice.

3) Which one of the following is an example of positive punishment?

   a) subtracting 40 points not attending group.
   b) unit restriction for smoking on the ward.
   c) loss of smoke walk privileges for 24 hours for throwing a chair.
   d) Having a patient who knocked over another patient's drink clean the dining room.

4) Which of the following are <u>secondary gain</u>, and which are examples of appropriate use of <u>positive reinforcement</u>?

   a) a patient feels ignored and causes a commotion, which results in several staff coming over to him to ask what is wrong.
   b) a patient who has spit 20 times or more a day is rewarded, every day for 1 week, for each day of that week that he spits less than 20 times.
   c) A patient regularly says he has a stomach ache in the mornings on Monday, Wednesday and Fridays, and is allowed to miss his social skills group.

d) A patient who has assaulted several staff and patients is given a token and verbal praise for every 15 minutes she remains in good behavioral control.

Which are secondary gain? (circle all those that apply) a b c d
Which are appropriate uses of positive reinforcement a b c d

5) If all staff ignore all examples of a patient's non-disruptive bizarre speech, this should, over time, cause what to happen?

a) the behavior will keep getting worse (i.e., more bizarre speech)
b) no change
c) the behavior will gradually reduce in frequency
d) a new psychotic behavior will emerge

6) If all staff are supposed to ignore the bizarre speech, but some staff respond to it, what will the effect be?

a) the odd speech will be harder to eliminate
b) the odd speech will be easier to eliminate
c) it won't make a difference
d) new psychotic behaviors may emerge

7) In the case of #6, the behavioral term for what has happened to the behavior is that it has been _____ reinforced.

a) variably
b) fixed
c) intermittently
d) continuously

8) If, at the beginning of the period that all staff are ignoring the behavior, the behavior initially increases in frequency, this is called a(n)?

a) replacement behavior
b) ballistic behavior chain
c) extinction burst
d) intermittent reinforcement

9) A patient, Charlie, is walking around the ward, touching walls and doorways every few seconds. A float nurse goes over to him and says "Charlie, you need to stop doing that." What should you say to the nurse to educate her on the appropriate way to deal with such a behavior?

10) When should you ignore appropriate behavior?

11) During therapy sessions with a delusional patient, the therapist looks down at the floor and does not respond when the patient brings up delusional ideas, but smiles at the patient, makes eye contact, and answers when the patient says things based in reality. This technique is an example of _____.

a) partial reinforcement
b) selective reinforcement
c) elective mutism
d) negative punishment

12) Which of the descriptions below is an example of <u>shaping</u>, which is <u>chaining</u>, and which is <u>fading</u>?

a) after a very disorganized patient learns to operate the shower knobs, apply soap, and apply shampoo, a staff member has the patient practice doing all three consecutively.
b) A patient with severe negative symptoms used to never say a word in group. So, a plan was started whereby every time the patient spoke a staff member praised him and gave him a token. Now, several weeks later, the patient is speaking about 8 times per group, and staff only praise him and give a token every 4 times he speaks. Due to the patient's continued improvement, the plan is to stop reinforcing him with tokens next week, and to use praise only.
c) A patient interrupted every group at least 10 times with inappropriate questions. A plan was started whereby he could earn his participation token if he interrupted 9 times or less. After succeeding for a week, a new plan was started whereby he would only earn his token if he interrupted 8 times or less. This went on for several weeks and now he can earn the token only if he interrupts less than 3 times per group.

Shaping	a b c
Chaining	a b c
Fading	a b c

13) Which situation below is appropriate for the use of extinction?

a) a patient repeatedly asks to be taken out for pizza
b) a patient repeatedly uses profanity and a loud voice when addressing a staff member
c) a patient threatens to physically attack another patient

d) a patient oversleeps nearly every day

14) In the ”A B C Model” of behavior, what do the letters stand for?

A_____B_____C_____

15) Describe how you would use the 3-step procedure (i.e., what might you say) to a dependent/institutionalized patient who repeatedly asks you when the next smoke walk is?

16) Describe how you would use the 3-step procedure (i.e., what might you say) to an angry patient who doesn't want to go to a scheduled group?

17) Why is time-out from reinforcement considered an example of treatment, whereas seclusion and restraint are considered examples of control?

18) What should you say to a patient to initiate a time-out procedure?

19) A patient is refusing to comply with a time-out procedure. When you try to initiate the procedure, he says: “I don’t need that, I can calm down. Just let me watch TV for a few minutes”. What should be your response?

20) The CABC cards and the Patterns and Trends Data Sheet are 2 techniques that can be used to collect data as part of a functional assessment, prior to starting a behavior contract. What important information do these provide?

21) In a token economy, as patients get close to discharge, is it better to give as much reinforcement as possible to consolidate the gains the patient made, or to reduce the number of times reinforcement is given? Why?

22) You see a patient, Henry, start a conversation appropriately with another patient, and you go over to him to praise him and tell him he will earn 10 points. How should you do this (i.e., what do you say)?

23) Jim, a patient, earns 8 out of 10 points for morning ADL criteria. The two criteria he missed are having his hair combed, and brushing his teeth. His target is 9. What is the proper feedback to give him during the morning team meeting/ADL review?

24) Which of the following is the most important predictor of how well chronic schizophrenia patients do after hospital discharge?

a) number of staff on the unit when they were hospitalized
b) amount of groups the patient participated in when they were hospitalized
c) dose of medication the patient took when hospitalized
d) number of positive statements made by staff to the patient when hospitalized

25) Factors associated with poor treatment outcomes among chronic schizophrenia patients in inpatient programs include (circle all that apply):

a) hostile statements made by staff towards patients
b) critical statements made by staff towards patients
c) inconsistent uses of reinforcement and punishment across all unit staff
d) use of negative punishment procedures

Appendix E

SCP WARD TRAINING CHECKLIST

Employee Name: Shift: Position:

Trainer: Date of written test: Date of in-vivo Training:

Instructions:
Demo1 – Demo5: Mentor checks trainee conducting procedure, provides rating and feedback
(Scale – 1: Substandard; 2: Good; 3: Perfect). A maximum of 5 checks should take place. If the employee is rated as 'perfect, on any demo, move to the next performance category (even if less than 5 checks have taken place). If the employee fails to demonstrate competency by the 5th check, notify Patient Care Manager and Program Director.

Performance Category	Intervention Description	Demo1	Feedback Given	Demo2	Feedback/ Modeling	Demo3	Feedback/ Modeling	Demo4	Feedback/ Modeling	Demo5
Handing out tokens		1 2 3		1 2 3		1 2 3		1 2 3		1 2 3
3-step prmpt soc. Intol.		1 2 3		1 2 3		1 2 3		1 2 3		1 2 3
3-step prmpt soc. Intol.		1 2 3		1 2 3		1 2 3		1 2 3		1 2 3
Verbal praise prosocial - structured activity		1 2 3		1 2 3		1 2 3		1 2 3		1 2 3
Verbal praise prosocial free time		1 2 3		1 2 3		1 2 3		1 2 3		1 2 3
ADL check Feedback		1 2 3		1 2 3		1 2 3		1 2 3		1 2 3

Performance Category	Intervention Description	Demo1	Feedback Given	Demo2	Feedback/ Modeling	Demo3	Feedback/ Modeling	Demo4	Feedback/ Modeling	Demo5
Prompt for group attendance		1 2 3		1 2 3		1 2 3		1 2 3		1 2 3
Differential reinforcemnt disorganiz.		1 2 3		1 2 3		1 2 3		1 2 3		1 2 3
Differential reinforcemnt intrusive		1 2 3		1 2 3		1 2 3		1 2 3		1 2 3
Time out procedure		1 2 3		1 2 3		1 2 3		1 2 3		1 2 3
Extinction questions		1 2 3		1 2 3		1 2 3		1 2 3		1 2 3
Filling out a CABC card		1 2 3		1 2 3		1 2 3		1 2 3		1 2 3
Prompt patient for sleeping		1 2 3		1 2 3		1 2 3		1 2 3		1 2 3

Appendix F

SLIS

The following questionnaire is intended to help us better understand how staff think about their work and how they view mental illness. This is NOT an evaluation or test, and there are no “right” or “wrong” answers. Because people’s beliefs about mental illness tend to vary, and because no “one” belief and/or philosophy is entirely correct, we ask that you complete this form so we can have a better understanding of what your thoughts are. Our goal is to use this information to modify staff training and better address the various philosophies and beliefs that people have about mental illness and treatment. At the end of the form, there is an optional section for comments and/or questions. You are under no obligation to complete the comments/questions section, however, we ask that you complete questions 1-9. Thank you for your input.

Please read each statement below and rate the extent to which you agree or disagree with the statement. There are no “right” or “wrong” answers. Please answer all questions.

1. Mental illness is inherited.

1	2	3	4	5	6
strongly agree	agree	not sure but probably agree	not sure but probably disagree	disagree	strongly disagree

2. There is no such thing as mental illness.

1	2	3	4	5	6
strongly agree	agree	not sure but probably agree	not sure but probably disagree	disagree	strongly disagree

3. The use of punishment is never justified in dealing with the mentally ill.

1	2	3	4	5	6
strongly agree	agree	not sure but probably agree	not sure but probably disagree	disagree	strongly disagree

4. Calling someone mentally ill involves a value judgment.

1	2	3	4	5	6
strongly	agree	not sure but	not sure but	disagree	strongly

agree		probably agree	probably disagree		disagree

5. Both abnormal (deviant behaviors) and normal behaviors (socially appropriate behaviors) are learned.

1	2	3	4	5	6
strongly agree	agree	not sure but probably agree	not sure but probably disagree	disagree	strongly disagree

6.) A person who is called mentally ill should never be held responsible for his or her behavior.

1	2	3	4	5	6
strongly agree	agree	not sure but probably agree	not sure but probably disagree	disagree	strongly disagree

7.) The staff of mental hospitals should not attempt to control behavior.

1	2	3	4	5	6
strongly agree	agree	not sure but probably agree	not sure but probably disagree	disagree	strongly disagree

8.) Abnormal behavior is often caused by unconscious motivation

1	2	3	4	5	6
strongly agree	agree	not sure but probably agree	not sure but probably disagree	disagree	strongly disagree

9.) Mental illness is often caused by a chemical imbalance in the body.

1	2	3	4	5	6
strongly agree	agree	not sure but probably agree	not sure but probably disagree	disagree	strongly disagree

Note: Scoring for SLIS = [1+3+6+7+8+9] – [2+4+5]