

EFFECTS OF AN INTERMEDIATE CARE PROGRAM FOR INMATES WITH SEVERE
PERSISTENT MENTAL ILLNESSES

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ABSTRACT

The effects of the Brown Creek Correctional Institute's Intermediate Care Social Skills Day Training Program were investigated using a population of forty-three adult male inmates with severe persistent mental illness. Comparisons were made for similar time periods before, during and after in regard to level of care, inpatient hospitalizations, behavioral infractions, and disciplinary segregations. Cost benefits were also investigated. Results indicate that the number and length of hospitalizations, length and number of disciplinary segregations, and number of behavioral infractions were lower for inmates during the program. However, some increases were found in these variables after inmates were transferred to other institutions. This increase could possibly be explained because of transfer to a lower level of care after participating in the Social Skills Day Training Program. Cost benefits were also found as a result of the lower number of hospitalizations, behavioral infractions, and segregations.

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DEDICATION

I would like to dedicate this thesis to Dr. Sally Joy MacKain. Her zealous advocacy for the incarcerated mentally ill population has not only advanced the knowledge base for practitioners, but inspired me to help continue her efforts. Her passion for teaching and mentoring has touched my life and provided me invaluable skills. Through our collaborative effort, we have also formed a friendship that I will always treasure. I am honored and privileged to have worked so closely with such a dynamic and dedicated contributor to the field of psychology.

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INTRODUCTION

The Mentally Ill Offender

The increasing number of severely persistently mentally ill (SPMI) individuals incarcerated in prisons in the United States has become a concern for not only the prison system, but the general public as well. The incidence of mental disorders is five times higher in the prison population than in the population at large (Kupers, 1999). The prevalence of serious mental illnesses, such as schizophrenia and bipolar disorder, in the correction system is between fifteen and twenty-four percent. According to a special report by the Bureau of Statistics 2006, State prisons in the United States held 705,600 mentally ill inmates, which is 56% of the total state inmate population (James & Glaze, 2006). The report states that one 13% inmates receives psychotropic medications, and one in five inmates receive mental health therapy or counseling. They report that although 34% inmates who require mental health services are receiving some form of therapy/counseling or medications, two thirds of these inmates are housed in facilities that do not specialized in these services (U.S. Department of Justice, 2001). The pervasiveness of mental illness within the prison system combined with the lack of available services requires that correctional institutions find more creative and cost effective means by which to address these mental health issues.

Researchers have investigated the reasons for the growth of mental health needs in prisons and have found that many of the mentally ill who used to be treated in community settings are being incarcerated. Kupers (1999) claims that the primary reason for this migration is the “deinstitutionalization and reduced resources of the public mental health system combined with the criminalization of poverty, the net effect being more mentally disordered individuals on the street and subject to arrest.”(p.11) Kupers also focuses on changes in the justice system that

allow mentally ill offenders to be incarcerated rather than treated (Kupers, 1999). In the years since the Mental Health Act of 1964, which led to deinstitutionalization, the consequences of poor planning and lack of treatment options have become abundantly obvious. Hospitals again are closing their doors, and communities and mental health systems are still ill-equipped to serve people with serious mental illness in the community.

Munetz, Grande & Chambers (2001), found that severe mental disability combined with substance abuse significantly increases the risk of incarceration. These individuals could also benefit from a substance abuse program integrated in a mental health setting. More of these significantly at risk individuals are now incarcerated rather than hospitalized for treatment, as in the past. Munetz and colleagues (2001) referred to this “transinstitutionalization” as the criminalization of the mentally ill.

Mentally Ill offenders in have specific needs that surpass those mentally ill in the general population. Offenders with mental illness require screening/diagnosis, crisis/suicide prevention, special housing, and social skills and illness management training to be able to function not only in the institution, but outside the prison system as well. A number of professional groups attempted to identify the measures that should be taken to address the special needs of these inmates. As a result of a 1980 lawsuit, *Ruiz v. Estelle*, a federal district court judge in Texas identified six components of minimally adequate mental health treatment program in prisons:

1. A systematic screening procedure
2. Treatment that entails more than segregation and supervision
3. Treatment that involves a sufficient number of mental health professionals to adequately provide services to all prisoners suffering from serious mental disorders
4. Maintenance of adequate and confidential clinical records

5. A program for identifying and treating suicidal inmates
6. A ban on prescribing potentially dangerous medications without adequate monitoring
(Kupers, 1999 p68)

Similar lawsuits have resulted in the National Commission of Correctional Health Care, the US Department of Justice, and the American Public Health Associations, each publishing updated minimal standards of mental health care in prisons. Kupers describes these minimal standards for treatment:

such as adequate screening and assessment, crisis intervention, outpatient services, inpatient services, the proper use of seclusion and restraint, policies regarding involuntary medications, suicide prevention programs, training for nonclinical staff in the basics of suicide prevention, and mental health care, peer review, record keeping, and so forth
(Kupers, 1999, p 68).

In an attempt to determine the availability of services to mentally ill inmates in the United States, the National Institute of Corrections conducted a survey of the services provided by state correctional institutions. Only 67% of the 49 states that responded reported that there was separate or special housing available for the mentally ill. Only 6% of those who responded reported the availability of outpatient or day treatment services.

In 1997, Elliot conducted a study of the Georgia Department of Corrections and their mental health model. He found it to be a “nonsystem” of care. In the areas of medication prescriptions, diagnostic procedures, and management of problematic behaviors, including assault and suicide, there was little to no focus on policies and procedures to treat the mentally disabled. More focused, self-contained intermediate and transitional mental health programs could significantly aid in rectifying these deficiencies. Psychiatric rehabilitation has been shoe

in controlled studies to promote illness management and recovery from mental illness and should play a major role in these programs (Mueser & MacKain, 2006).

Psychiatric Rehabilitation for the Mentally Ill

The stress-vulnerability-coping-competence model explains how various symptomologies, combined with environmental, social and behavioral stressors, affect the onset, course and outcome of an illness. An individual can have several different outcomes from these stressors depending on their ability to use protective factors to cope with the events (see Figure 1). When biological factors combine with the cues from the environment in stressful situations, the individual can react in any number of ways and pathology can become apparent.

Vulnerability to environmental stressors can be significantly reduced by a comprehensive program of skills training in a variety of areas. Life skills, vocational skills, illness self-management skills, family and social interaction skills all combine to ameliorate the patients' feelings of inadequacy which can lead to relapses even with successful pharmacological intervention (Lieberman, 1988).

Research has shown that psychiatric rehabilitation can act as an adjunct to medication therapy to help in the successful treatment for people with severe mental illness (Lieberman, 1998). The rehabilitation model in psychiatric disability involves a framework that identifies different levels at which interventions may be targeted 1) pathology, 2) impairment, 3) disability, and 4) handicap. Neuroscience is making strides in the area of addressing pathology and impairment or symptoms that characterize severe mental illness and findings will be extremely helpful in advancing more specialized medications and identifying people at risk for developing psychosis and other persistent disorders.

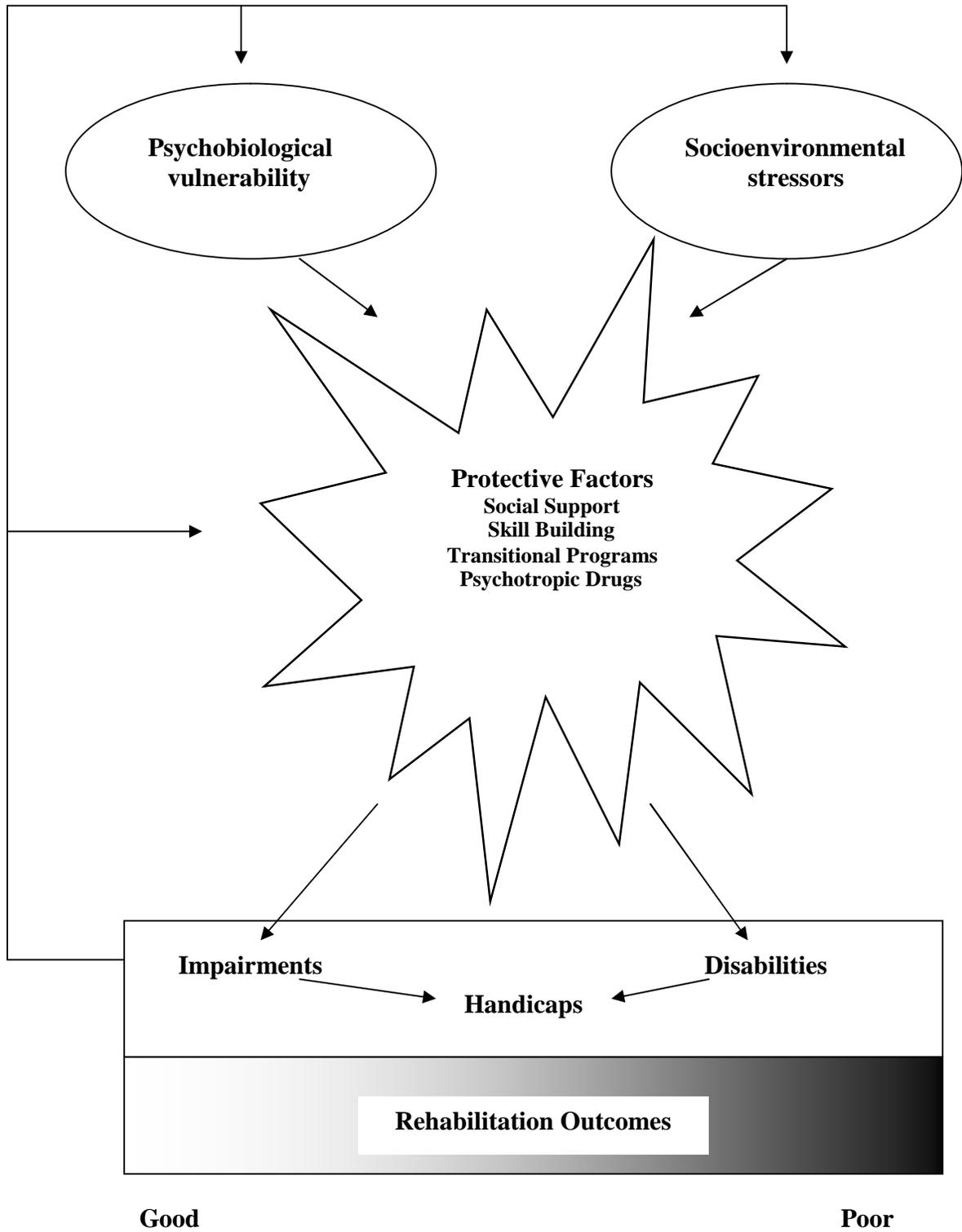


Figure 1. Stress-Vulnerability-Coping Competence Model

Persons with severe mental disabilities often end up in jails or prisons because their inability to cope with stress in what is often a hostile environment, results in an exaggeration of symptoms that impairs their judgment. Symptoms associated with mental illness such as poor verbal, social and problem solving skills often result in the person being acted upon by society rather than successfully interacting with it. Improving the patient's knowledge is key to treatment of mental illness both in society as well as in correctional environments. The influx of the mentally disabled in prisons has resulted in the need for the penal system to rethink and adapt to the needs of the mentally ill and its population.

Psychiatric rehabilitation began with the moral therapy era and moved forward into what is now established in the illness self-management and skills training arenas (Lieberman, 1988, Mueser & MacKain, 2005). The moral therapy era began with the 19th century reformists, who were concerned with more humane care, recognized the need for the mentally ill to do something different (eg. change of scene, assistance with employment, and social activities. Vocational rehabilitation programs began with the 1943 amendments to the US Vocational Rehabilitation Act. These acts provided financial support for vocational training and support for the mentally disabled. "Work therapy geared to the capability of the individual patient should be a cornerstone of community treatment of the long-term patient" (Lieberman, 1998, p.3). The community mental health movement of the 1950's and 1960's asserted that the mentally ill should be provided community support in order to live functional and productions lives (Lieberman, 1998).

During the deinstitutionalization of the mentally ill, many community mental health centers failed to provide adequate services. More recently, programs have progressed to incorporate key operating principles of psychiatric rehabilitation including case management,

coordination of services, and family and community involvement. Due to a lack of availability of services as well as a reaction against the pathologizing medical model and stigma, non-professionals and “consumers” started psychosocial rehabilitation centers. These were a form of psychological self-help clubs that focused on socialization and recovery. These clubs gave birth to the comprehensive, multi-service psychosocial rehabilitation centers. These centers concentrate on “a) strategies to help people cope with the environment rather than succumb to it, b) health induction rather than symptom reduction, and c) improvement of the person’s ability to do something in a specific environment even in the presence of residual disability” (Lieberman, 1988 p.4). Finally, the advent of illness self-management allows those who suffer from SPMI to utilize tools such as shared decision making, education, medication adherence, and skills training to better cope and succeed with their illness. Skills training is a behavioral intervention that tends to include role play, modeling and reinforcement and guides clients to utilize skills that enable them to cope with stressors, problems solve, be involved successful relationships, support networks, and work (Mueser & MacKain, 2005).

The development of psychiatric/psychosocial rehabilitation has led to the progression of realistic goals and expectations by applying appropriate drug intervention, counseling, and educational and training programs. Among those with severe psychiatric disorders, such as schizophrenia, it has become increasingly important to expand the diagnosis beyond the positive symptoms, such as delusions and hallucinations, to include negative symptoms, such as poor self care, social withdrawal, exclusiveness, abandonment of family responsibilities, and work incapacity (Lieberman, 1988). These negative symptoms may be exacerbated by medications, which are prescribed to combat positive symptoms. However, effective skills training is

designed to target and compensate for negative symptoms such as poor attention and interpersonal problem solving skills.

Mentally Ill Offenders in North Carolina

At the time of the study, North Carolina Division of Prisons provided four levels of mental health care: inpatient, residential, intermediate care (or Day Treatment), and out patient services.

Inpatient Care

Only one prison institution offers inpatient care, which is at an accredited twenty-four hour comprehensive mental health facility located at Central Prison in Raleigh. The goal of inpatient care is to stabilize acute psychotic and assaultive behavior. Central Prison maintains a 144 single cell housing facility for the treatment of male inmates with serious acute mental illnesses. Services include psychotropic medications, individual and group therapy, activity and rehabilitation therapy, and mental health nursing services.

Residential Care

Inmates requiring a less intensive level of care may be housed in one of three residential mental health programs within prisons for further stabilization of chronic mental illness. These provide single or double bed housing and offer treatment and activity programming similar to that provided at state psychiatric hospitals. Programming includes individual and group psychotherapy, anti-psychotic medications, activity therapies, and mental illness education..

Intermediate Care/Day Treatment

Inmates with long-standing mental illnesses who require frequent mental health intervention and programming, but are able to function with the general prison population, may be served in an Intermediate or Day Treatment Program. In this type of program operated within

larger correctional facilities, inmates are housed in a dorm-like setting similar to the general prison population. Once an inmate's mental disorder is stabilized, and he has learned skills such as job assignments, coping and med compliance, the inmate may be transferred back to his originating prison for outpatient follow-up.

Outpatient Care

The Department of Corrections provides outpatient mental health services within prison units across the state to more than 30,000 inmates. Services range from simple evaluation and treatment of situational disorders to intensive management of serious and life-threatening mental illnesses. Inmates live with the "general population" in these prison settings and receive no special housing or group treatment, they simply live in the general prison population and receive medication or individual therapy when needed (North Carolina Division of Prisons, 2005).

Intermediate Care Programs and Services

Few U.S. day treatment programs exist in United States prisons, yet this intermediate level of care hold promise. A review of the literature yielded data for three programs that provide psychiatric rehabilitation-type services. At this level of care, for example, intermediate care programs were jointly established by the New York State Office of Mental Health and the Department of Correctional Services to reduce risk and better manage inmates with psychotic disorders. Condelli, Bradigan & Holanchock (1997) assessed these programs in 1994 and then again in 1997. They found significant reductions in serious rule infractions, suicide attempts, correctional discipline, crisis care, seclusion, and hospitalization.

An intermediate care program at McNeil Island Correction Center in Washington State was assessed by Lovell and colleagues (2000). They found a significant decrease in the number of inmates with symptoms classified as severe and an increase in those considered moderate.

Other studies have shown that McNeil inmates were less symptomatic upon leaving the program. These gains were maintained after release for at least 2 months (Lovell et al., 2000).

In 1988, the California Department of Mental Health's Program at Vacaville, implemented a Day Treatment Program at the California Medical Facility prison. The programming was developed around the Social and Independent Living Skills Modules Developed by Dr. Robert Liberman. MacKain and Steveler (1990) evaluated the effectiveness of the Medication Management Module (Liberman, 1988) as this was the most widely used module. They found that there was an increase in medication knowledge scores as well as the medication management skills test for inmates who had received 18 months of training compared to those who had not. They did, however, claim that the medication compliance rates at Vacaville were quite high before the programming, but a lack of ability to conduct follow-up assessments hindered the researchers from concluding if the skills and knowledge acquired from the Medication Management Module was maintained after treatment (MacKain & Streveler, 1990).

Brown Creek Correctional Institute Day Training Program

The Brown Creek Correctional Institute's (BCCI) Day Training Program was established by psychologists in 1992 in effort to provide structured programming at an intermediate level of care for inmates with severe persistent mental illness. The 78-bed program was discontinued in 2004 due to staff nursing and staff shortages and other logistical issues. Located near Charlotte, NC, The Day Training Program operates within an 852 bed medium custody facility for felon, adult male offenders. Between 1992 and 2004, the program provided structured programming for over 250 inmates with severe persistent mental illness. The Brown Creek Day Training Program has been described in detail elsewhere (MacKain & Messer, 2004), and is the focus of the current follow-up study. The focus of the Brown Creek Day Treatment Program was to

provide participants with an understanding of mental illness, methods for managing the illness, training the inmate for appropriate work, personal and prosocial behavior, and combating the effects of chronic mental illness on thought process and the quality of life (MacKain and Messer, 2004). Many of the BCCI inmates committed crimes because of their diminished judgment and reasoning abilities resulting from their illness. One of the primary goals of the BCCI Day Program was to teach alternative behaviors and problem solving skills to maximize the chances that the inmate will not re-offend after their release from prison (Messer, 2002).

The BCCI Day Program also based its programming on the Social and Independent Living Skills (SILS) Modules/psychiatric rehabilitation model used in the Vacaville program described above. The SILS is an empirically validated treatment model that teaches essential skills, like medication and symptom management, using basic principles of social learning, success prompting, cueing modeling, and reinforcement (Wallace et al, 1992).

A majority of the inmates admitted to in the BCCI Day Program were diagnosed with schizophrenia or other psychotic disorders, but there is also evidence of mood (e.g. Bipolar Disorder), anxiety, and organic disorders (MacKain & Messer, 2004). Many inmates were also dually diagnosed with mental retardation, personality disorders, or substance abuse disorders. The BCCI program ensured daily contact with treatment staff in a dormitory housing assignment that allowed mentally ill inmates to have more personal freedom and social interaction than was possible within the inpatient and residential facilities. This less restrictive delivery of care was intended to encourage the inmate to take responsibility for living as normally as possible and to promote personal independence through enhancement of social, vocational, academic, and leisure skills. It was intended that participants would be better equipped for a more successful integration into the general prison population or community (Messer, 2002).

The Social Skills Day Treatment Program used some of the SILS modules developed by Dr. Robert Liberman and colleagues at the UCLA (Wallace, Liberman, MacKain, Blackwell, & Eckman, 1992). The Basic Conversation Skills module is designed for individuals who have little success in developing social relationships and for those who need re-training and improvement of their socialization skills. The Symptom Management module trains the participant to recognize signs of relapse and encourages the development coping skills to avoid relapse (Baucom, 2004). It is primarily directed toward those who suffer from a psychotic disorder. The Medication Management module is designed to primarily help patients become more self-reliant in managing their psychotropic medications. Skills in this module include how to obtain information about their medications, how to administer medications and monitor those medications side effects, how to identify and manage side effects should they occur, and how to negotiate medication issues with health care providers. Some participants also received training in Recreation for Leisure skills, a module designed to help people become more self-reliant and resourceful in their use of leisure time by learning to plan and enjoy recreation activities. A fifth curricula was created by the prison staff and focused on rehabilitation related to vocational skills, and job readiness. Activities included arts & crafts and horticulture. These activities were designed to increase decision making skills, physical activity, and knowledge of life processes and environmental concerns.

Potential Costs and Benefits of Psychiatric Rehabilitation Programs for Mentally Ill Offenders

Howells and colleagues (1993) state that the highest recidivism rates occur within one year after release from prison. Effective mental health programming in prisons have the potential to reduce costs to house and treat mentally ill inmates and reduce the chance that the mentally ill individual will re-offend, in so far as the crime is related to symptoms of the

disorder. This programming can also promote successful transition of the mentally ill offenders back into communities where they can use the skills they have acquired and enjoy a higher quality of life.

A successful psychiatric rehabilitation program can have benefits on many levels if the inmate actively participates in their medical compliance, if the length of hospitalizations are reduced, and if there is a reduction in seclusions and/or segregations (Elliot, 1997). First, if the inmate understands his diagnosis and the necessity for medication compliance, he is more likely to make a smoother transition from the prison population into the community. This is an especially important goal as 90% of inmates are paroled and/or released from prison (Kupers, 1999). Improved medication compliance has the potential to reduce psychiatric hospital stays, and reduce the number and length of seclusions. Reductions in these areas represent substantial savings. The cost to the tax payer per infractions ranges between \$100 and \$560 (Lovell & Jamelka, 1996). Inmates housed in a minimum security prison can be maintained for \$15,000-\$22,000 per year (Wettstein, 1998). For those who are in seclusion, isolation, or psychiatric facilities, the cost per year is much greater because of the need for more intense supervision and/or medical intervention.

Not only to tax payers and the inmate benefit, but the families of inmates do as well (Elliot, 1997). Elliot highlights the other potential beneficiaries of effective treatment while in prison. When offenders are released from prison, if their transition is easier and they do not fall back into previous behaviors because of their mental illness, their families will also benefit greatly. Elliot also notes that if offenders are med-compliant, the incidence of recidivism among inmates will also diminish (Elliot, 1997). Finally, correctional staff may also benefit from safer work environments if the mentally ill inmates are in control of their illness (Elliot, 1997).

THE PRESENT STUDY

The primary goal of the Skills Day Training Program at Brown Creek was to provide skills needed to manage one's illness effectively. The behavioral integrations provided are designed to promote skill generalizing as well , such that inmates will use acquired skills in other less structured settings such as general population units or after parole. In a review of social skill training programs, the SILS modules were notes as being most promising because the problem solving, in vivo and homework assignments and activities specifically program skills to generalize (Huxley, Rendall & Sederer, 2000)

Implementation of skills acquisition promotes recovery and a better quality of life. However, behavioral programs cannot succeed unless the future environments have similar contingencies and structure to promote skill maintenance and generalization (Mueser & MacKain, 2006). A recent study that followed BCCI Day Program participants after transfer to other units found that inmates acquired medications management skills and information, but an average of 8 months after transfer, the skills eroded (MacKain & Baucum, 2008). This finding raised flags regarding the durability of the skills or other possible beneficial effects of the program. None of the units to which BCCI participants were transferred offer continued skills training, and inmates may struggle after transition to these less structured environments.

The purpose of this study was to investigate the potential symptomatic and behavioral benefits and cost-savings of the BCCI Day Training program for severely mentally ill inmates. Because no control group was available, a repeated measures design was used to see changes in problem behavior and need for intensive psychiatric treatment before admission to BCCI, during treatment, and post-transfer to other units. The researcher predicts that inmates during treatment at BCCI will have fewer psychiatric admissions, fewer days in hospitalization, fewer behavioral

infractions, and show less need for seclusion or segregation than before treatment at BCCI. It is also predicted that these reductions in psychiatric and behavioral problems would be maintained after transfer to other prisons. If this is the case, the prison system would benefit as well as the inmate in that there will be less financial cost per inmate.

Although the Social Skills Day Treatment Program was based on an empirically validated treatment model, the impact of the program at Brown Creek is not clear. Although, previous research (Baucom, 2005) indicated former program participants were found to have mild symptoms and only mild functional impairment, a lack of control group and brief follow-up makes it impossible to claim that the stable clinical status is due only to the program. A repeated measures design would, however, allow some inferences to be made regarding changes over time across different settings and programs. The current project examines computerized data for former program participants a 36 month period: 12 months before admission to BCCI, 12 months during treatment at BCCI, and 12 months after transfer to other prison units

HYPOTHESES

It is expected that psychiatric behavior problems will remain the same or decrease during BCCI as compared to before BCCI. This is because many offenders came from more restrictive settings that prevented escalation due to housing and supervision. It was hoped that the BCCI program would be able to maintain this stability at a lower cost. After transfer to another unit, it was expected that inmates would be able to maintain the level of behavior and psychiatric functioning and that use of hospitalizations and segregations would not increase.

METHOD

Participants

Inmates who received at least 6 months of the Social Skills Day Treatment Program at Brown Creek Correctional Institute, were included. Data was retrieved on computer at the Pender County Correctional Institute with the assistance of Charles Messer and Shana Trioli. The researcher visited the Mental Health Program of the Pender County Prison seven times during the Summer of 2006 to retrieve data on all inmates that had participated in the Day Treatment Program at BCCI. Names and OPUS numbers (identification numbers assigned by the North Carolina Department of Corrections) of participating inmates were provided by Charles Messer, the director of the BCCI Day Treatment Program. The names and OPUS numbers were sent securely to Pender County through the Prisons inter-mail system. OPUS numbers may be linked to names on the NCDOC website therefore, the researcher assigned all inmates a subject number separate from the OPUS number so as to secure inmate confidentiality. Inmate movement within the prison system, disciplinary infractions, disciplinary segregations, and mental health diagnosis were collected for each inmate. No names or OPUS numbers were removed from the Pender County Prison.

Forty-three male inmates, ranging in age from twenty-eight years to fifty-nine years with an average age 41.44 years, were found to have at least 6 months of treatment and were still in the prison system at least 12 months after leaving Brown Creek. A majority of the inmates (84%) were African American and 16% were Caucasian. The first inmate in this study was admitted to the BCCI Day Program August 26, 1999 and was transferred August 10, 2000. The last inmate to begin treatment at Brown Creek was admitted to the program October 2, 2003 and was transferred November 9, 2004. A majority of the inmates (80%) suffered from a Psychotic

Disorder, 7% suffered from Major Depression, 7% suffered from Bipolar Disorder, and 7% suffered from other Mental Health Disorders. The mean number of months that inmates were in treatment was 13.8 (SD=8.62).

For all subjects, three time periods were be considered: 12 months before admission to BCCI, the time during treatment at BCCI (minimum of 6 months), and 12 months after transferring from BCCI. Descriptive data will also be collected on all subjects for 18 months after transferring from BCCI. Only subjects who were in the NC Prison System for all three time periods were considered.

Program Level

To further place the results of the current research in context we will classify the institutions from which inmates entered Brown Creek (Pre Day Program setting), and also the Post Day Program settings to which inmates were transferred. We will analyze the change in level of program that an inmate comes from before entering treatment at Brown Creek compared to the level of program after the inmate leaves treatment. Inpatient or residential care is considered a higher level of care, day treatment is considered the same level, and outpatient services are considered a lower level of care. It will be important to understand this movement to higher and lower levels of care, as previous research (MacKain & Baucom, in press) shows that inmates may not retain medication management skills after treatment. This result will enhance the understanding of the current research and will be discussed later.

Problem Behaviors & Need for Inpatient Psychiatric Services

The following variables will be examined to see if there are fewer problematic behaviors during treatment at Brown Creek as opposed to time spent outside of treatment after Brown Creek.

Need for inpatient psychiatric services

To assess whether there is a reduction in the number of psychiatric admissions to Central Prison during treatment at Brown Creek, the number of inpatient psychiatric admissions 12 months before admission to Brown Creek, during BCCI, and the number of inpatient admissions 12 months after transfer from Brown Creek were compared using a paired samples t-test. The length of stay in days for the three time periods will also be compared. A repeated measures ANOVA would have been preformed, but the statistical package was not available

Serious behavioral infractions

To evaluate whether there is a reduction in serious behavioral infractions, the number of infractions committed 12 months before admission to Brown Creek, during treatment, and 12 months after release from Brown Creek will be calculated. These comparisons will be made using a paired samples t-test

Segregations

To evaluate whether there is a reduction in the need for disciplinary segregation intermediate care at Brown Creek, the researcher will calculate the number of times the inmate is sent to segregation for disciplinary reasons 12 months before admission to Brown Creek, during treatment at Brown Creek, and the number segregations 12 months after release from Brown Creek. The length of each segregations will also be calculated. These comparisons will be made using a paired samples t-test

RESULTS

Level of Care

In general, participants entered BCCI from both higher and lower levels of care and were transferred mostly to a lower level of care, or outpatient prison based facility (see Figure 2). If

viewed as a continuum of care (outpatient = 1, day training = 2, residential/inpatient = 3) there was a significant decrease in the level of program after BCCI ($M=1.30$, $SD=.71$) as compared to before treatment ($M=1.91$, $SD=.92$), $t(42)=4.05, p<.001$, therefore inmates, in general, were transferring to a lower level of care after completing treatment as compared to the level of care before treatment.

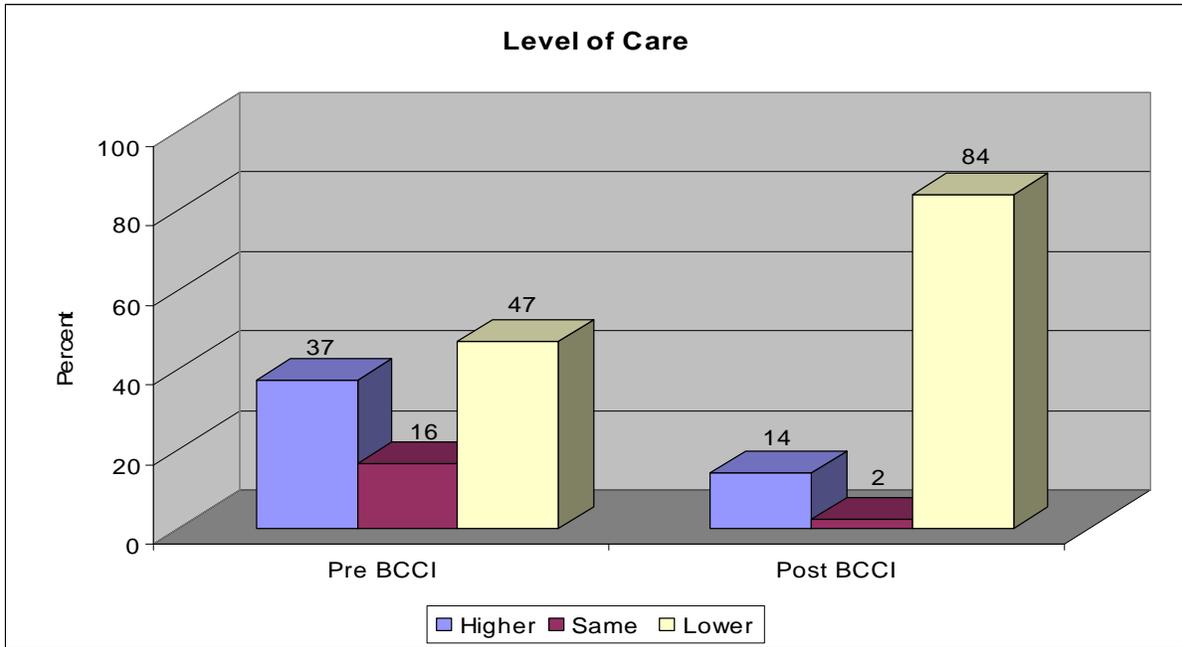


Figure 2. Level of care that inmates received pre, during and post BCCI Day Training Program
Problem Behaviors

Time comparisons for the 43 participants were performed on five variables. Paired samples t-tests were conducted for each variable

- 1) 12 months before BCCI compared to time during BCCI
- 2) During BCCI compared to 12 months after BCCI
- 3) 12 months before BCCI compared to 12 months after BCCI

To maximize power, a Bonferroni correction was made for each set of t-tests. Since there are 5 paired samples t-tests conducted for each time period, a significance level of .01 was used to reduce the chances of a Type I error.

Need for Inpatient Psychiatric Services

The mean number of admissions to Central Prison (CP) for psychiatric inpatient treatment was higher 12 months before BCCI ($\underline{M}=.49$, $\underline{SD}=.74$) as compared to during BCCI ($\underline{M}=.26$, $\underline{SD}=.73$), $t(42)=2.03$, $p<.05$, but the difference fell short of the .01 level. The number of inpatient admissions to CP was significantly less during BCCI ($\underline{M}=.26$, $\underline{SD}=.73$) as compared to 12 months after BCCI ($\underline{M}=.61$, $\underline{SD}=.93$), $t(42)=3.04$, $p<.01$. The mean number of admissions to CP was not significantly different before ($\underline{M}=.49$, $\underline{SD}=.74$) as compared to after ($\underline{M}=.61$, $\underline{SD}=.93$) BCCI, $t(42)=-.67$, $p=.51$. The results indicate a decreased need for inmate hospitalization during BCCI, but hospitalizations increased significantly after transfer to other prison units (see Figure 3).

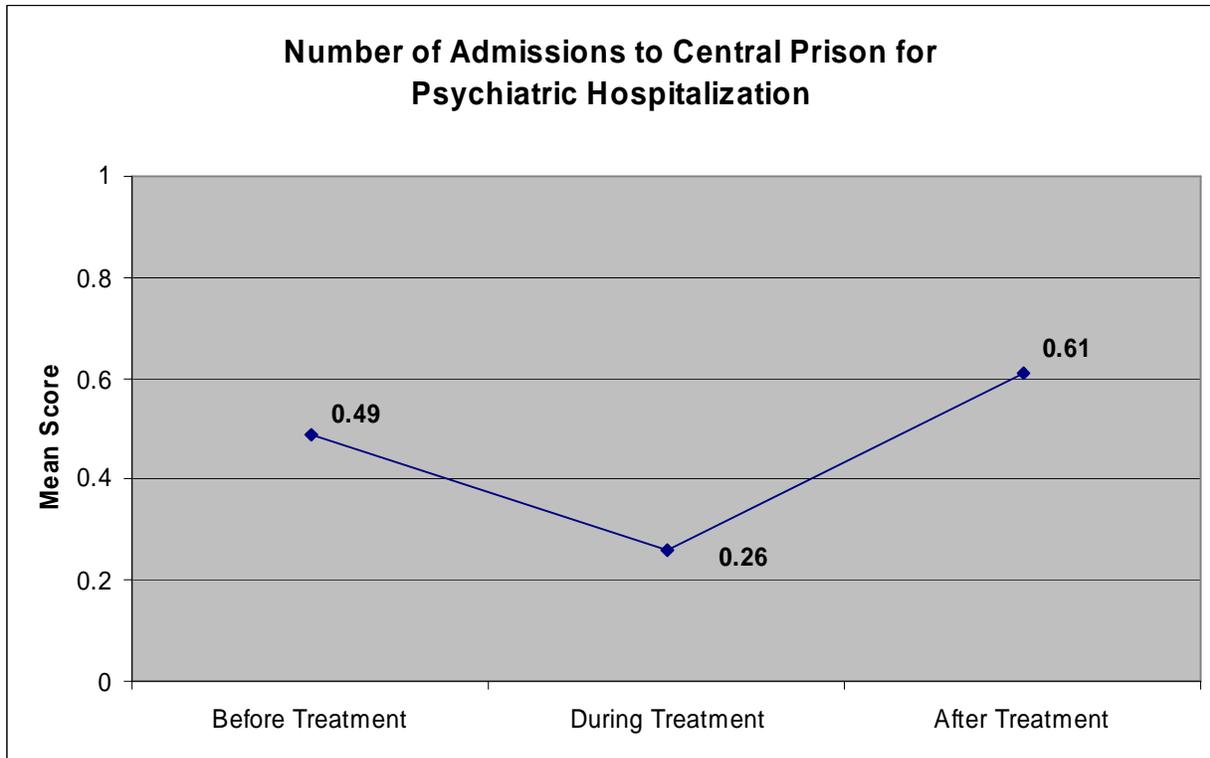


Figure 3. Number of admissions to Central Prison pre, during and post BCCI Day Training Program.

In addition to number of admissions, mean total days in the inpatient facility (CP) was also compared for each interval. Inmates spent significantly more days in CP before BCCI ($M=19.86$, $SD=35.56$) as compared to during BCCI ($M=4.67$, $SD=14.60$), $t(42)=3.32$, $p<.01$. Inmates spent significantly fewer days in CP during BCCI ($M=4.67$, $SD=14.60$) as compared to 12 months after BCCI ($M=32.84$, $SD=63.41$), $t(42)=3.39$, $p<.01$. The difference [$t(42)=-1.58$, $p=.12$] between days in CP before ($M=19.86$, $SD=35.56$) compared to after ($M=32.84$, $SD=63.41$) BCCI was not statistically significant. These results indicate that inmates spent less time in hospitalization during BCCI as compared to before or after BCCI. However, there was a trend toward more days in hospitalization after the BCCI Day Program as compared to before (See Figure 4).

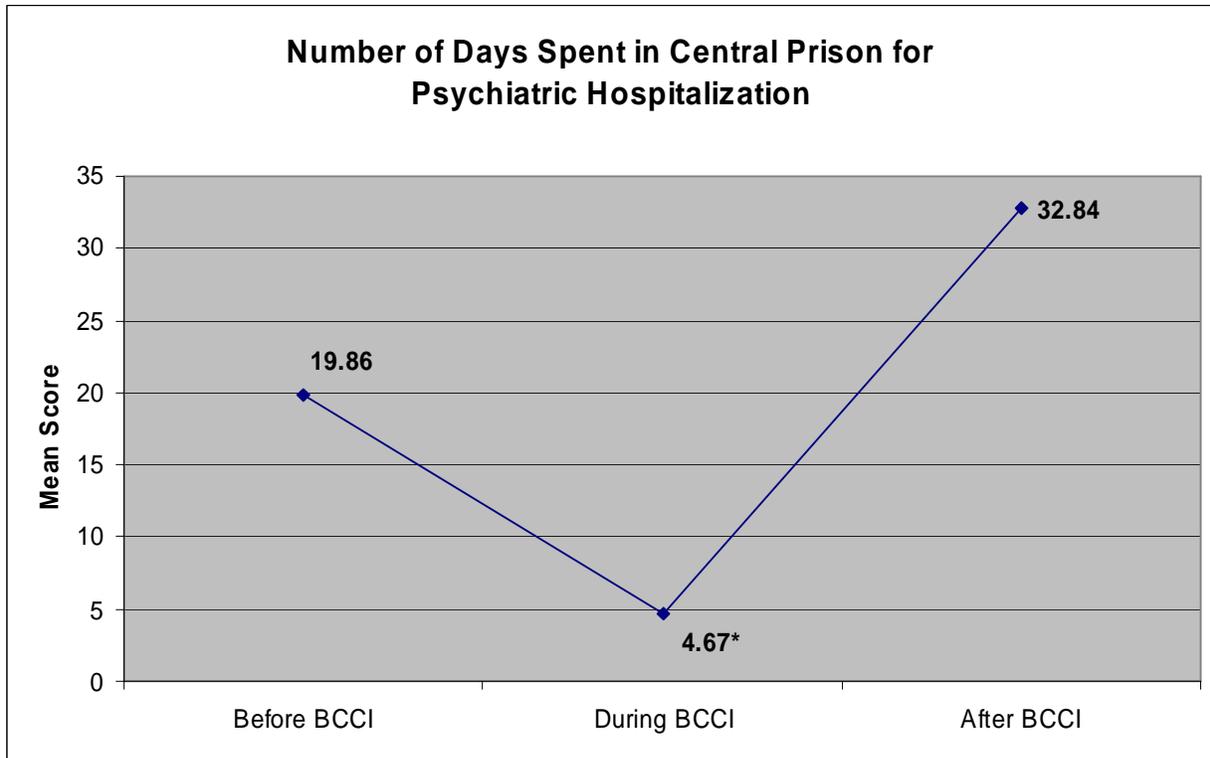


Figure 4. Number of days spent in Central Prison pre, during and post BCCI Day Training Program.

Serious Behavioral Infractions

The number of rule violations or infractions that inmates committed during BCCI (\underline{M} =1.42, \underline{SD} =2.32) as compared to before BCCI (\underline{M} =1.49, \underline{SD} =2.13) did not differ significantly, $t(42)=.19$, $p=.85$. Inmates committed significantly fewer infractions during BCCI (\underline{M} =1.42, \underline{SD} =2.32) as compared to 12 months after BCCI (\underline{M} =2.77, \underline{SD} =3.03), $t(42)=2.99$, $p<.01$.

Interestingly inmates committed significantly more infractions after BCCI (\underline{M} =2.77, \underline{SD} =3.03) as compared to before BCCI (\underline{M} =1.49, \underline{SD} =2.13) $t(42)=-2.61$, $p<.01$. This analysis indicates that the number of infractions before and during BCCI remained fairly stable, but increased significantly after transfer BCCI to other units (see Figure 5).

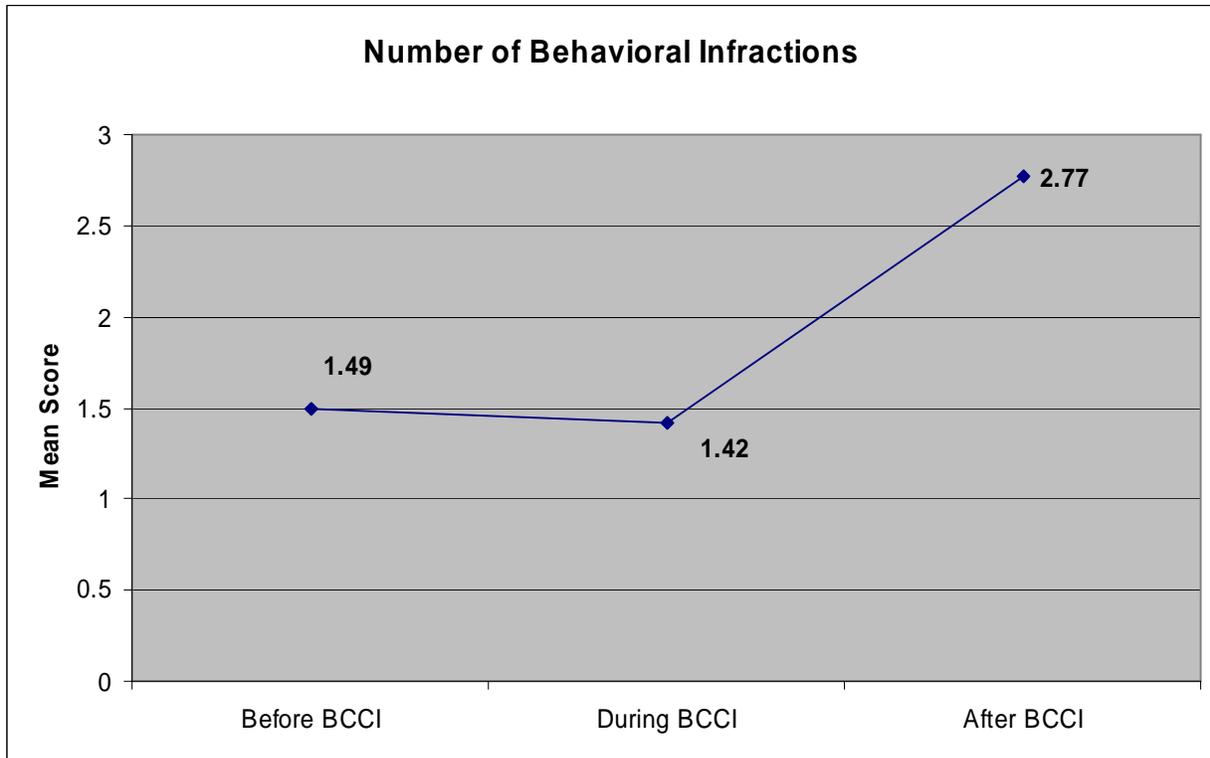


Figure 5. Number of behavioral infractions pre, during and post BCCI Day Training Program.

Disciplinary Segregations

There was no statistical difference in the number of inmate segregations 12 months before BCCI ($M=.95$, $SD=.23$) as compared to during BCCI ($M=1.07$, $SD=.30$), $t(42)=-.35$, $p<.73$. However, fewer inmate segregations were found during BCCI ($M=1.07$, $SD=.30$) as compared to 12 months after BCCI [$(M=1.95$, $SD=.34$), $t(42)=2.64$, $p<.05$], and this difference was statistically significant. The mean number of disciplinary segregations after BCCI ($M=1.95$, $SD=2.25$) was higher than before admission to BCCI ($M=.95$, $SD=1.50$), $t(42)=-2.68$, $p<.01$. Results indicate that the number of behavioral infractions remained steady during the 12 months before and for the time during the BCCI program, but increased significantly during the 12 months after transfer from BCCI (see Figure 6).

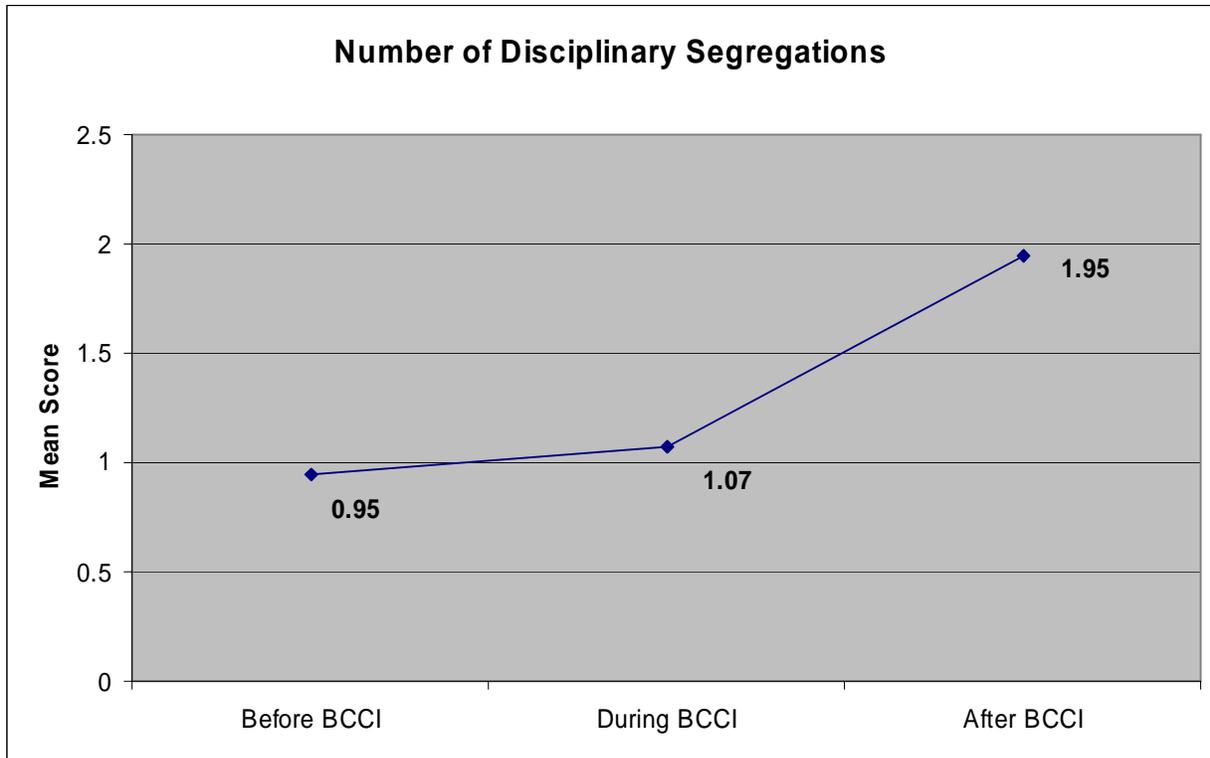


Figure 6. Number of disciplinary segregations pre, during, and post BCCI Day Training Program.

In addition to the number of segregations for behavior problems, the total days in segregation during the three time periods was also analyzed. Analyses revealed a pattern similar to the number of infractions and number of disciplinary segregations. There was not a statistically significant difference in the number of days in segregation before BCCI ($M=12.33$, $SD=2.84$) as compared to during treatment ($M=13.02$, $SD=3.90$), $t(42)=-.17$, $p<.90$. However, inmates spent significantly fewer days in segregation during BCCI ($M=13.02$, $SD=3.90$) as compared to 12 months after BCCI ($M=25.21$, $SD=4.56$), $t(42)=2.68$, $p<.01$. Also, inmates spent fewer days in segregation before BCCI ($M=12.33$, $SD=18.62$) as compared to after BCCI ($M=25.21$, $SD=29.87$), $t(42)=-2.63$, $p<.01$ (see Figure 7).

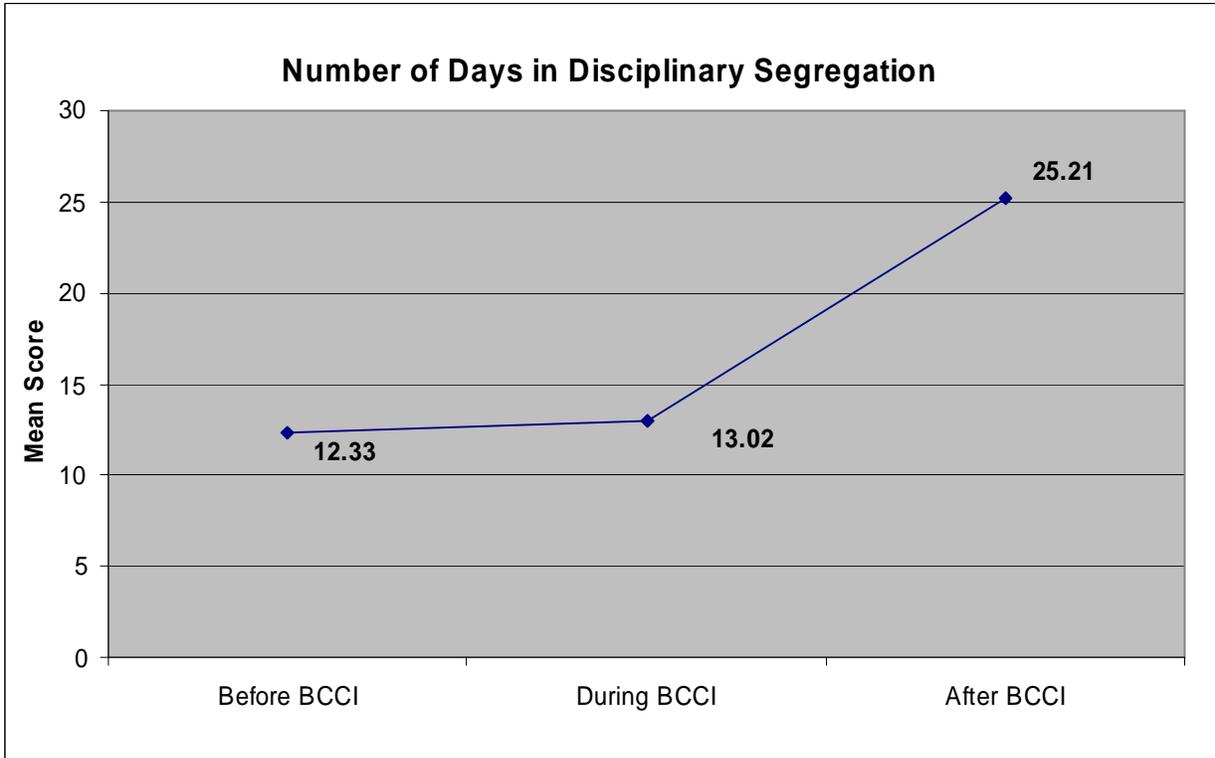


Figure 7. Number of days in disciplinary segregations pre, during, and post BCCI Day Training Program.

In summary, psychiatric status as measured by number of admissions to CP and total length of psychiatric hospital days was significantly better during treatment as compared to before and after. In fact, inmates' psychiatric status, when transferred to other settings after BCCI, worsened considerably. Interestingly, behavioral problems as measured by number of behavioral infractions, number and total length of segregations, did not change significantly when moving from the mostly highly structured settings to intermediate care at BCCI. However, there was a significant increase in problem behaviors after being transferred to a mostly lower level of care after BCCI.

DISCUSSION

Need for Inpatient Psychiatric Services

Results indicated that inmates were hospitalized less often during the BCCI Program as compared to before and after. Inmates also were hospitalized, on a clinical level, more often before treatment as compared to after treatment. The reduction in the number and length of psychiatric hospitalizations during BCCI is best viewed within the context of the level of structure and supervisions offered during the three time periods. Inmates were admitted to BCCI from a variety of types of settings: outpatient, day treatment and residential/inpatient. BCCI was viewed as a “step up” in supervision and structure for inmates coming from outpatient/general population settings, a lateral transfer for day treatment inmates and a “step down” for inmates in residential and inpatient programs. The BCCI Day Program appeared to meet the psychiatric needs of this diversity of admissions in that, overall, the need for hospitalizations decreased significantly in the year after admission.

Unfortunately, those gains were lost after transfer to the mostly outpatient units. This is not surprising given the lack of opportunities for continued training in the illness management, reduced structure, higher staff-to-inmate ratio, and perhaps less sensitivity to specialized training in mental illness. Although it is impossible to identify the specific characteristics of the BCCI program that contributed to the improved psychiatric functioning while at the program, it seems apparent, however, that the training inmates received did not generalize to the (mostly) less structured situations in the general population/outpatient units. This finding is consistent with those in Baucom’s follow-up study of 73 former BCCI participants in that personalized knowledge from the Medication Management Module was retained but skill-related performance was not (Bauom, 2005). It may be argued that having those skills available to them in the outpatient/less structured settings may have reduced length and frequency of hospitalizations. However, without a control group, it is impossible to tell.

Besides the skills training content of the BCCI program, the availability of specially trained staff, and more of them, may have exerted the most influence on inmate psychiatric stays. If inmates' symptoms flare up or if they display warning signs that signify an impending relapse, BCCI staff were trained to intervene earlier. However, staffing patterns at BCCI were not substantially more intensive than that of the general population units. It is more likely to be the structured programming offered.

If an inmate was hospitalized during BCCI, the stay tended to be shorter than during the pre and post transfer periods. In other words, inmates were able to be stabilized more quickly during the BCCI program and returned to BCCI. This ability to recover more quickly may be due to the illness management education the inmate receives in the day treatment program, as the information is fresh. Program participants are explicitly taught to monitor symptoms of their illness and so they can more easily identify and aid in their own treatment, promoting a return to a functional level.

It was probably naïve to expect that the benefits gained during BCCI would be maintained afterward. Without continued prompting, reinforcement and practice, the skills likely eroded. Also, staffing patterns focus on security exclusively rather than rehabilitation of mental illness.

These less frequent hospitalizations and briefer hospital stays during BCCI, benefit not just the inmate, but it also provides a financial benefit to the prison system. The North Carolina Department of Corrections 2005-2006 Annual Statistical Report states that the cost per inmate in close custody, or hospitalization, is \$79.72 per day (NCDOC Annual Statistical Report, 2007). This would make the average cost for hospitalizations per inmate in the current study \$1,583.24 for the twelve month period before treatment and \$2,618.01 for the twelve month period after

treatment. Projecting these costs, one could imagine that if these inmates had been in day treatment for the for the twelve months before and after the current study, the North Carolina Department of Corrections may have saved at the least \$1,210.95 and at the most \$2,245.71 per inmate per year in reduced hospitalization costs. Savings for the 42 inmates involved in the current study may have ranged from \$50,859.90 to \$94,320.24 per year.

Severe Behavioral Infractions

The number of behavioral infractions was fairly stable from preadmission to BCCI throughout the 12 month period in BCCI. The levels of care pre-admission to BCCI were varied, so the stability of the infractions during both periods is difficult to interpret. However, there was a significant increase in infractions after transfer from BCCI. The increase in infractions could be attributed to the reduced level of supervisions in the general population, a lower level of care. In light of the finding of increased need for psychiatric hospitalizations after transfer from BCCI, the higher number of behavioral infractions during this same period is not surprising. Previous research has concluded that mentally ill offenders have more difficulty following rules. It makes sense that greater need for psychiatric hospitalizations would be related to higher rates of behavioral infractions.

The cost of increased behavioral infractions after BCCI is high. A 1996 statistical report states that it costs the North Carolina Department of Corrections \$970.00 per inmate per behavioral infraction (James & Glaze, 2006). The average cost per inmate per year before and during BCCI for the current study was between \$1,377.40 and \$1,445.30. The average cost per inmate per year after BCCI was \$2,686.90. Therefore there is less expense for the North Carolina Department of Corrections before and during BCCI as compared to after BCCI. The argument could be made that the number of infractions would not have increased if the inmates

had not received services at BCCI and then been moved to a lower level of care. Even if this is the case, it is less costly for inmates to be housed at a day treatment facility in regards to need for hospitalizations.

Disciplinary Segregations

Both the number and length of disciplinary segregations significantly increased after BCCI as compared to before and during BCCI. The pattern (stable from pre to during BCCI; significant increase post BCCI) was nearly identical to that found for behavioral infractions. It makes sense that infraction and segregation rates would be similar. The cost calculations above are relevant to segregations as well. Costs were consistently less during BCCI than afterwards in terms of behavior management.

Limitations

There are several limitations to the current study. The first and most obvious limitation is the lack of a control group. The North Carolina Department of Corrections (NCDOC) works diligently to assess and identify severely persistently mentally ill inmates. When identified, the most appropriate and available services are offered to these individuals. Therefore, there are few to no inmates identified with a SPMI who receive no treatment. Thus it is impossible to obtain a no or alternate treatment group from Department of Corrections. The decision to use the inmates as their own control was the most appropriate way to assess the benefits of the BCCI Day Program.

A second limitation is the type and amount of information gathered on the participants. Because the correctional and mental health services offered were not designed in collaboration with researchers, the data collected and recording procedures were designed for this kind of evaluation. For example, diagnoses are assigned based on clinical judgment and not on

empirically validated procedures like the Brief Psychiatric Rating Scale (BPRS) (Overall & Gorham, 1962). A measure such as the BPRS would have been invaluable if it had been administered at predetermined intervals as a measure of symptomatic change. As the data obtained in this study was limited to the data collection of the NCDOC, a limited number of variables could be assessed.

A final limitation is a lack of resources to calculate exact cost benefits. The cost of hospitalizations and segregations is fairly constant among all North Carolina Prisons. However, the cost of transporting each inmate varies on the number of inmates being transferred at one time, the distance that the inmate needs to travel and the cost of gasoline at the time of transport. Therefore, an estimated cost of transfer could not accurately be assessed.

Future Directions

This rich data set provides many possibilities for future studies. It would be interesting to follow psychiatric inmates that participated in BCCI for longer than a 12 month period. It may be that after an initial period of exacerbation of psychiatric problems, the offenders are eventually stabilized. A preliminary look at the current long-term data suggests that this may be the case, but further investigation is needed.

An additional area of interest would be to involve more inmates in a study similar to the current research. There were many more offenders in the initial data set of the current study. However, they did not fulfill the 12 months pre/post admission to BCCI inclusion criteria. The 12 month time period was chosen because it contributed something unique to the literature. However, data for inmates who were directly admitted to BCCI from processing or who had less than 12 months in the NCDOC before admission (n=105) may yield more robust findings related to post BCCI psychiatric and behavioral status.

In conclusion, findings should be shared with policy makers to inform development of appropriate services for offenders with SPMI. Particularly clear is the opportunity for services tailored to the needs of inmates who are making the transition from an intermediate level of care to outpatient (general population) institutions. At minimum, booster sessions that allow inmates to rehearse and maintain illness management skills should be offered in every post transfer setting. Likewise, staff at the post-transfer institutions would benefit from training in providing support for SPMI offenders on the road to recovery. The findings indicate that offenders did at least as well or better from pre BCCI to during BCCI and at a lower cost. It can not be said the skills training component of BCCI's Day Program as THE unique factor that contributed to symptom and behavioral stabilization during the BCCI program. It may be that the program structure and specially trained staff are responsible for the better stabilization. Regardless of which component was most important, the data argues for the existence of such programs given this one's cost effectiveness and better control of symptoms and behavior.

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