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ABSTRACT

Sharon H. Davis
Outcomes of the Implementation of the Mental Health Recovery Measure in the DeKalb Community Service Board Population
(Under the direction of Dr. Francis McCarty, Faculty Member; and Fabio Van De Merwe, Director of Service Utilization, DeKalb CSB)

The relationship between mental health and public health has been debated for decades. But when services are delivered through publically funded mental health clinics, it clearly becomes a public health endeavor. One of the latest trends in mental health service delivery is the recovery concept. Developed in the 1990's, the recovery concept represents a paradigm shift where successful treatment is defined by self-awareness, self-care, and self-fulfillment. Furthermore, patients are encouraged to assess their own progress in the recovery process. There are currently nine unique assessment tools to measure recovery progress, including the Mental Health Recovery Measure (MHRM), which was used in this study. The current study followed the implementation of the recovery model in the DeKalb Community Service Board (DeKalb CSB). DeKalb CSB has 12 locations that serve 10,000 patients with mental illness, substance abuse, and developmental disabilities each year. Only patients with primary diagnoses of mental health or substance abuse disorders were considered for this study. Implementation of the MHRM began in December 2008 and included all DeKalb CSB patients, however only new DeKalb CSB patients were considered for this study. During 13 months of data collection 960 clients completed 2 assessments and 196 completed 3 assessments. A new consumer is defined as someone who has just completed the intake process and has no record of previous service at DeKalb CSB. The current study examined trends in MHRM data in the DeKalb CSB population; and offered recommendations for future implementation.

INDEX WORDS: recovery, mental health

OUTCOMES OF THE IMPLEMENTATION OF THE MENTAL HEALTH RECOVERY MEASURE IN THE DEKALB COMMUNITY SERVICE BOARD POPULATION

By:

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A Thesis Submitted to the Graduate Faculty
of Georgia State University in Partial Fulfillment
of the Requirements for the Degree

MASTER OF PUBLIC HEALTH
ATLANTA, GA 30303

APPROVALS PAGE

Outcomes of the Implementation of the Mental Health Recovery Measure in the DeKalb Community Service Board Population

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AUTHOR'S STATEMENT

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Chapter I – Introduction

A Brief History of Mental Health Treatment in the United States

For about a century (1850's to 1950s), the mentally ill in the US lived isolated from the rest of society in over-crowded institutions. While the conditions in these institutions varied, many were considered inhumane and in some cases the patients were used as free labor, performing chores to help minimize the operation costs for the institution. In this era there were few proven therapies for the patients, so there was much experimentation (some unethical) on the patients (Grobb, 1983). This paradigm came to a gradual halt, starting in 1963 when President Kennedy signed The Mental Retardation Facilities and Community Mental Health Centers Construction Act of 1963 into law. Deinstitutionalization, or the process of moving the mentally ill from institutions to the community, had begun (Geller, 2000). Deinstitutionalization was a product not only of legislation, but also of the first proven pharmaceutical therapy, Thorazine, which greatly changed the treatment of mentally ill patients (Goldman, 1956).

Although there were high hopes for deinstitutionalization, this was not enough to ensure its successful implementation. The current social welfare system simply lacked the resources to accommodate millions of formerly institutionalized patients that entered the general community. There was simply a lack of housing, employment, treatment, and financial resources for these individuals. And since the new Community Mental Health Centers were administered on a state or local level the methods and outcomes were highly variable (Geller, 2000). Some states like Connecticut benefited from a prestigious research university (Yale University) that had a great interest in new research centered on service delivery and utilization (Jacobs, 2007). Other states

like California, with a very large population, cut costs by maximizing the use of contractors (Libby, 1998). And in Texas, they recently decided to integrate community mental health into the general scheme of public health. The expectation of this move is that mental health will be more closely aligned with the state level resources that support community mental health (Ganju, 2008).

History of Community Mental Health in Georgia

Up until the 1990s, community mental health was delivered in many Georgia communities, but it lacked a cohesive structure and had gaps in service. Because of the gaps in service a few patients were kept in mental hospitals against their will because a sufficient place in the community could not be found. After a lawsuit against the state of Georgia, it was determined that it was unlawful to keep treated patients in the hospital against their will. Thus, Georgia began an integrated system of community health. In 1994, 28 Community Service Boards were created. Most service boards serve several counties, and in a few large counties the service board serves only one county. The Georgia Community Service Board has five standing committees and has a set of bylaws. These services boards are funded through state resources.

The DeKalb County Community Service Board (DeKalb CSB) consists of twelve treatment centers (including a crisis center). Annually, there are about 10,000 consumers of the DeKalb CSB, however this population is very dynamic. Approximately 150 new consumers arrive every month. Unfortunately, there is currently no method for tracking consumers who drop out each month. This is because although there is a formal process for entering the system, there is not a formal process for exiting the system. However, because the consumer census consistently remains at 10,000 it can be inferred that approximately 150 existing consumers drop

out each month. Most consumers are walk-ins or are referred from the nearest state mental hospital (Georgia Regional Hospital - Atlanta), the Georgia Crisis and Access Line (GCAL), and the DeKalb CSB Crisis Center and Central Access Line. Seventy percent of the DeKalb CSB population is African American. Like most people who rely on community mental services, the consumers of DeKalb CSB have an unemployment rate that is at least 3-5 times that of the general population. The consumers are disproportionally uninsured, and when if they are insured it is through Medicare or Medicaid. In the last few years the annual budget for DeKalb CSB has either been stagnant or reduced. With a growing number of consumers and a shrinking budget, it is imperative to maximize resources.

The Recovery Model

Based on a comprehensive study of the US Mental Health Service delivery system, the President's New Freedom Commission on Mental Health (2003) stated that the reformation of the mental health system should be based on two concepts. First, recovery should be the explicit goal of the new system. Mental health recovery has become a driver of both the planning and treatment of serious mental illness. Recovery is grounded in the belief that individuals with serious mental disorders can and do get better and return to fulfilling, meaningful roles in their community. Secondly, the report stated that treatment should focus on building the capacity to cope with life stressors through building resilience, not just on managing symptoms. Thus, recovery and resilience are the foundation of the future mental health system. Still, empirical research leaves much to be discovered about both constructs with little or nothing known about the relationship between the two (Breedlove, 2006).

Recovery as an outcome is rooted in the idea of empowerment – setting an expectation that the consumer has the capacity to influence the outcome, letting consumers define and pursue their own life goals (Torrey, 2005). The current mental health system is an academic one, based on professional expertise, with limited roles for consumers and family members. In this model mental illness is presented as brain disease, biochemical or genetic in nature, with treatments based on pharmaceuticals, and for which the prognosis is long-term maintenance. To the contrary, the recovery model has grown out of the life experiences of people who have a mental health diagnosis and through trial and error have learned what helps and what hinders. The recovery model puts far more emphasis on peer support and on daily life than on medical treatment per se, although such treatment is an important element for some people (The Evaluation Center, 2005).

MHRM in the DeKalb CSB Population

Recovery is measured through self-assessment instruments given to mental health consumers on a regular interval. This study examines the use of the Mental Health Recovery Measure (MHRM) (Bullock and Young, 2003) in the population of DeKalb County Community Service Board (CSB) consumers. The content of the MHRM and the MHRM subscales are based upon a specific conceptual model of mental health recovery that is grounded in the recovery experience of persons with psychiatric disabilities (Young, 1999). The development of the MHRM was based on the experiences of individuals with psychiatric disabilities and involved a grounded theory analysis of qualitative data to develop a model of recovery based upon these experiences.

Implementation of the MHRM began in the DeKalb CSB population in December 2008. Since use of the MHRM began, 960 new consumers have completed the MHRM at least twice – once at intake and one 90 days later. The purpose of the current study is to examine the following research questions:

1. Is there a statistically significant difference in pre-and post-test MHRM scores?

2. Are there any statistically significant differences in the score difference between pre-and post-test scores among the groups classified according to each demographic variable?

3. Are there any statistically significant differences in the score difference between pre-and post-test scores among the different types of primary clinical diagnosis?

4. Are there any statistically significant differences in the distribution of scores among the groups classified according to each demographic variable?

The demographic variables for this study are:

- Age
- Race
- Gender
- Primary Diagnosis
- Location of Second Assessment

Another purpose of the study is to identify the optimal time interval for re-administration of the MHRM in this population. In addition to these research questions, an important outcome of this study is to provide one of the first recovery model studies where a recovery measure is administered in a population and the results are evaluated. For any assessment, the interval between repeated measures has a large effect on the total score outcome. Currently, there is not a recommended interval for repeat assessments of the MHRM. Hopefully this will study will also contribute to the growing body of knowledge on the recovery model and the MHRM assessment. Also, the study population is comprised of over 70% African Americans, which is a high proportion of African Americans for a mental health study.

Chapter II – Literature Review

De-Institutionalization

Psychiatric hospitals in the United States emerged in the late 18th century and were often located in quiet rural areas and were small in size (Grobb, 1983). There was a great emphasis on the physicians and assistants giving individual treatment to each patient. The hospitals had a schedule of activities, good nutrition and hygiene and exercise (Grobb,1983). A caring "moral therapy," designed to treat patients with respect and dignity away from the stresses of everyday life, was also implemented (Grobb, 1983).

While some patients showed progress and were able to return home, soon the more chronic patients would return and fill up the existing facilities. Expansion became necessary and soon hospitals became larger and overcrowded with a much smaller staff to patient ratio. There was less personal attention and more energy exerted in maintaining control, with the quality of treatment declining markedly. Rather than being places of therapy and treatment, psychiatric hospitals became places of last resort (Grobb, 1983).

Mental hospitals continued to be places of despair into the 1950s, with the main objective of crowd control. Then, several key events began to put a major change in motion – deinstitutionalization – or moving the treatment of the mentally ill out of hospitals and into outpatient community mental health centers (CMHCs). The first event was the 1949 Passage of the National Mental Health Act (P.L. 79–87) which led to the establishment of the National Institute of Mental Health (NIMH) (Geller, 2000). Two years later, NIMH published the Draft Act Governing Hospitalization of the Mentally Ill. By 1963, President Kennedy signed The Mental Retardation Facilities and Community Mental Health Centers Construction Act of 1963

(P.L. 88–164) ; it contained funds for constructing community mental health centers (CMHCs), but no funds for staffing them (Geller, 2000).

In addition to these legislative measures, the advent of better pharmaceuticals also was a factor in the movement to deinstitutionalization. In the early 1950s, Chlorpromazine (Thorazine) became widely used in mental institutions, and quickly displayed unprecedented efficacy in treating the mentally ill. However, in an era when the average state hospital was operating at a cost of $2.70 per capita per day (Bay, 1955), the introduction of chlorpromazine put a great strain on hospital budgets — as pharmacy costs increased 20-fold (Goldman, 1956). This provided a great economic impetus to favor outpatient community care in lieu of the traditional institutional model (Hyde, 1959). Underlying all of these factors was a strong belief by many Americans that the current institutional system was inhumane and that patients would be better off living in the community.

Between 1954 and 1996 the number of patients in state and county mental hospitals went from 553,979 to 61,722 (Goldman, 1983;Witkin, 1996). While it is easy to quantify the movement of patients out of institutions, quantifying the other effects of deinstitutionalization is more complex. Although there was great enthusiasm for moving to the Community Mental Health Centers (CMHCs) model, initially most states did not provide resources or infrastructure to adequately serve patients. Many key components like housing and employment were not integrated into the services offered. After many years and many iterations of providing services, service delivery has been better defined and implemented. But even with the improvements, many agree that the system of CMHCs remains inadequate. Other indirect policy changes in Medicare, Medicaid, VA Benefits, and Social Security (Disability and Supplemental Income) have provided both increased income and services for mentally ill patients (Geller, 2000).

Community Mental Health

Community Mental Health went through many decades of refinement. There were a series of trends in this field, which are worth exploring. In the 1960s, emerging treatments from the 1950s were refined and fully implemented. These modes of treatment include Day hospitals, or places where patients could get a full day of treatment, which included therapy, career counseling, and other interventions to aid their integration into the community (Drubin, 1960;Gussen, 1960). Other areas of treatment included social rehabilitation, employment readiness, and half-way houses (Pinsky, 1965;Harrington, 1966). In addition to these existing treatments, other complementary services including emergency services, adequate housing, employment of former patients in human services and better integration with other social services provided a broader range of assistance.

In the 1970s, two new forms of service emerged – case management and assertive community treatment. Case management provided a better continuity of care for patients, while assertive community treatment provided a well documented program to help patients sustain a quality life in the community (Geller, 2000). The 1980's saw fewer new programs, but further refinement of existing ones. In addition to this, evaluation research was implemented in the hopes that the results would identify strengths and weaknesses of the current programs (Tessler, 1982). By 1980's many reports documenting the large numbers of mentally ill homeless individuals emerged. Lipton described the situation by stating that, "The streets, trains, bus stations, and shelters of the city have become the state hospital of yesterday" (Lipton, 1983). During the 1990's there were fewer innovations, but an emphasis on high risk populations like the homeless and hospital recidivates (Geller, 1992). Once deinstitutionalization began, each state took a different approach to serving individuals with mental illness. Unfortunately, few

standards of care were implemented nationwide. Thus, the variation of care from state to state was significant.

Connecticut

Some states like Connecticut benefited from a strong relationship with a prestigious research university. Federick Redlich, chairman of the Yale Department of Psychiatry joined Governor Abraham Ribicoff as the original developers of the Connecticut Mental Health Center (CMHC) concept. After the CMHC opened in 1966, one of the first research initiatives was to develop a service model for a division of the CMHC that served two diverse neighborhoods – the Hill Neighborhood of New Haven and West Haven. Descriptive and analytical studies were done, along with methodologically innovative and policy-relevant investigations (Jacobs, 2007).

By 1970, the collaboration produced a Depression Research Unit. The CMHC went on to become a leader in psychiatric epidemiology, conducting a wide variety of research that included bereavement, substance abuse, and the criminal justice system. But there was also research in service delivery and prevention, education, psychopharmacology, and public health. Research is at the cornerstone of the CMHC thanks to generous government grants and a premier research institution. It must be noted that Connecticut is the exception, not the rule. Most states are so overburdened in providing services that there are few resources for research. However, the research provided by the CMHC provides a valuable resource for other community health agencies around the country (Jacobs, 2007).

California

Like many other states, California faced the challenge of determining which level of government should run community mental health centers (CMHCs). In 1991 Program

realignment, a legislative act, went into effect. The legislation was designed to enable the state's mental health system to meet the growing demand for services in the face of a large and growing budget deficit. A central piece of the legislation granted local mental health authorities greater fiscal and administrative responsibility for managing mental health services (Masland, 1997). The categorical restrictions previously imposed by the state were eliminated, allowing the local mental health authorities to use designated funds with more flexibility. Under realignment, local mental health authorities assumed full responsibility for providing mental health services. The realignment shifted the control and risk from state government to local mental health authorities at the county level (Snowden, 2002).

Given that the community mental health system in California served about 1.5 million consumers at the time, any large scale changes could have great impact on hundreds of thousands of consumers. Recent studies have shown that realignment achieved its primary purpose: mental health expenditures dropped dramatically (Scheffler,1998, 2000). Libby, et al did an analysis on the economics of contracting out much of the services, accounting for the fluctuations in the mental health market sector. They found an inverse relationship between contracting and unit costs for all services, which was statistically significant for all but inpatient services. However, the optimal level of contracting is difficult to assess for a specific local service system due to the market forces (Libby, 1998). California provided a good example of how to align services to keep a consistent level of service, while greatly reducing cost.

Texas

In most states community health agencies operate independently from public health agencies, but in Texas there has been an initiative to fully integrate mental health as a component

of public health and early intervention efforts. One of the main goals of this initiative is to integrate mental health services into other existing social services. There is an emphasis on developing consumer and family networks, workforce development and training, and improved data and technology infrastructure. The early intervention efforts include identifying potential consumers through the juvenile justice, child welfare, and criminal justice programs (Ganju, 2008).

Health specialists, who provide training to school districts, are now located in all 20 of the states regional education service centers. A mental health component is being added to the mandatory health curricula. The Hogg Foundation for Mental Health is being established to provide a center of workforce development. The goal is to develop a sustainable training infrastructure in the state, building competencies needed to enter the workforce. There are three mechanisms to the data and technology improvements: enhancing connectivity and coordination of mental health care across both state and local agencies in real time, supporting infrastructure development, and providing data to document the transformation successes and outcomes (Ganju, 2008).

The major challenge is to integrate new initiatives, each with their own constraints. Because this is a comprehensive initiative, it will involve capacity building across many agencies. This requires buy-in and commitment across a large number organizations and groups with diverse missions. A major aspect of the transformation is to shape, define, and promote the "win-win" philosophy. In 2007, the Texas legislature appropriated $82 million for mental health crisis redesign. In a similar manner, $500 million related to behavioral health services was appropriated to other state agencies. In many states, mental health agencies are not part of the

larger public health initiative. It should be interesting to see the future outcomes in Texas (Ganju, 2008).

Homelessness

Two of the most disturbing outcomes of deinstitutionalization are the increase in both homelessness and incarceration. It is estimated that 20-25% of the homeless population (which now exceeds 3 million) is mentally ill (Link, 1994). Furthermore, mental illness is a vulnerability that confers risk of homelessness (Susser, 1993). Sullivan, et al (2000) conducted a study evaluating the various paths to homelessness. They found that the homeless mentally ill resemble the general homeless population more than the mentally ill who are housed. For example, both groups of homeless people (mentally ill and not mentally ill) contain a significant proportion of ethnic minorities, while the housed mentally ill are 70% white. Almost one third of the housed mentally ill are married, while less than 10% of the homeless population are married. More than half of the housed mentally ill completed some college. This rate is much lower among those who are homeless and mentally ill (28.1%). The mentally ill who are homeless have twice the prevalence for alcohol misuse and six times the prevalence for drug abuse when compared with their housed cohorts (Sullivan, 2000).

Another study done in San Diego County where 10,340 consumers from the mental health system were categorized as homeless (N=1569) or non-homeless (N=8771) most of the differences between the mentally ill homeless vs. mentally ill non-homeless were statistically significant. The greatest differences between these cohorts is substance abuse – 20.9% of those who are not homeless have a substance abuse disorder, but 60.5% of those who are homeless have a similar disorder. Also, 49.7% of those who are not homeless receive Medi-Cal benefits,

while only 39.2% of those who are homeless receive these benefits. Finally, men made up a much greater proportion of the homeless population (62%) versus the non-homeless population (40.7%). A logistic regression revealed that African Americans have the greatest risk of being homeless, followed by Caucasians. Interestingly, Latinos, Asian Americans and other minorities had a much lower prevalence of homelessness. Those with schizophrenia had the highest risk of homelessness, and those with major depression had the lowest. Those who had a substance abuse disorder were more than five times as likely to be homeless (Folsom, 2005).

In the early 1980's many researchers attributed the growing numbers of mentally ill homeless people to the process of de-institutionalization. But more recent studies, like Sullivan, et al (2000) have proposed new theories about homelessness among the mentally ill. A commentary by Cohen, et al (1992), argues that deinstitutionalization began in the mid-1960's, and a dramatic increase in homelessness among the mentally ill did not begin until the late 1970's. Cohen believes that the social, political, and economic changes of the late 1970's to early 1990's are much more likely to have contributed to the rising increase of mentally ill homeless people. He points to large decreases in affordable housing, especially single-room occupancy housing, in many large cities like New York and San Francisco. Furthermore, by the early 1980's many of the existing landlords did not rent units to those who had just been discharged from a mental hospital. Cohen also attributes this rise in homelessness to a decrease in manufacturing and low-skill jobs, as well as the social welfare policies of the Reagan/Bush era. To summarize, Cohen believes that changes that occurred from the late 1970's to early 1990's have affected all Americans. However, he believes that these changes have had a greater impact on the poor and marginal populations, and many mentally ill people fall into this category (Cohen, 1992).

Incarceration

In 1988, it was estimated that over 280,000 people were suffering from a mental illness are serving jail and prison terms. Specifically nationwide, 16.3% were in jails, 16.2% in state prisons and 7.4% in federal prisons (Heyrman, 2000). Studies done between 1996-2002 show that 15%-24% of US inmates have a severe mental illness (Borum, 1998), and a recent report by the Bureau of Justice Statistics indicates that half of the inmates – over one million people – have at least one mental health condition (Carter, 1998). According to a 2003 report by the Human Rights Watch, there are three times as many men and women with mental illness in U.S. prisons as in mental health hospitals (Human Rights Watch, 2003). The rate of mental illness in the prison population is three times higher than in the general population. These numbers have been on the rise for almost 30 years. Some scholars suggest that there was a 154% increase of incarcerated mentally ill offenders (MIOs) between 1980 and 1992 (Travis, 1997).

Compounding these disturbing statistics is the fact that for many of these individuals there will be a revolving door in and out of the prison system, as they are more likely to become repeat offenders. There is also a strong likelihood that they these prisoners will not receive adequate treatment during their incarceration. This lack of treatment can make the prison an environment that exacerbates the prisoner's mental condition. The 2003 report by the Human Rights Watch, which is based on two years of interviews with correctional officials, mental health experts, prisoners and lawyers, has painted a grim picture of the current state of MIOs. Security staff typically view mentally ill prisoners as difficult and disruptive and place them in barren high-security solitary confinement units. The lack of human interaction and the limited mental stimulus of twenty-four-hour-a-day life in small, sometimes windowless segregation cells, coupled with the absence

of adequate mental health services, dramatically aggravates the suffering that the mentally ill must endure. Some deteriorate so severely that they must be removed to hospitals for acute psychiatric care. But after being stabilized, they are then returned to the same segregation conditions where the cycle begins again. The penal network serves not only as a warehouse for the mentally ill, but, by promoting restrictive housing for mentally ill prisoners, it is acting as an incubator for deteriorating illness and psychiatric breakdowns (Human Rights Watch, 2003).

A study done in the state of Texas assessed all new prisoners who entered the Texas Department of Criminal Justice (TDCJ) between September 1, 2006 and August 31, 2007. The study included 79,211 prisoners in 116 locations (Baillargeon, 2009). All incoming prisoners underwent both a physical and psychiatric evaluation. Of this study population, 7878 persons were identified as having one of the following psychiatric disorders: Major Depressive Disorder, Bipolar Disorders, Schizophrenia, and Non-Schizophrenic Psychotic Disorders. The percentage of mentally ill in this prison system is about 10%, which is less than what Heyrman (2000) reported. In this cohort, women represented 39.7% of the prisoners with Major Depressive Disorder and 29.3% of those with Bipolar Disorder. Women comprised a smaller portion of psychotic disorders (8.5% of Schizophrenics and 15.9% of those with Non-schizophrenic psychotic disorders). Those with any psychiatric disorder were also older than those without mental illness – 73.5% of the mentally ill were 30 years or greater, while only 60.4% of those without disorders were 30 years or greater (Baillargeon, 2009).

A logistic regression was done to measure the risk for multiple incarcerations as a function of mental illness. The number of prior incarcerations was recorded for each prisoner. The odds ratios were adjusted for race, gender, age, current type of offense (violent vs. non-violent) and length of current sentence. This data is statistically significant and shows that

prisoners with any type of psychiatric disorder are more likely to have multiple incarcerations than those without a psychiatric disorder (Baillargeon, 2009).

Co-Occurrence of Substance Abuse and Mental Illness

Some mental health patients experience a co-occurrence of substance abuse and mental illness, some experts refer to this as a dual diagnosis. Although dual diagnosis patients have likely participated in community health programs for decades, unique treatment strategies for these patients were not considered until the 1980's. There are few statistics about the prevalence of patients with a dual diagnosis, however it is clear that this number is increasing and that a critical sub-population is the young, chronically (mentally) ill patient (Drake, 1998).

Several studies have examined the prevalence of psychiatric disorders among individuals with substance use disorders (SUDs). The estimated prevalence ranges from 18% to 70% among those seeking treatment for SUDs (Center for Substance Abuse Treatment, 2005). Psychiatric comorbidity is associated with more severe functional impairment, more interpersonal and social problems, a more chronic and protracted course of illness, and less likelihood of completing and benefiting from treatment (Schafer, 2007; Soyka, 2000). Thus, psychiatric comorbidity may deter a successful recovery among dually diagnosed patients.

In New Hampshire, a dual diagnosis study was conducted between 1989 and 1992. One arm of the study tracked 152 patients with a comorbidty of schizophrenia or schizo-affective disorder and SUD; the other tracked 51 patients with a comorbidity of bipolar disorder and SUD (Xie, 2005 and Drake 2004). Both studies sought to address the following four questions: (1) What is the course of illness and outcome for these patients with co-occurring disorders? (2)

What is the course of their hospital and outpatient treatment utilization? (3) Can we define recovery as a set of positive outcomes consistent with consumer definitions? (4) How are different recovery outcomes related to each other? Each of the participants was evaluated on a six month interval. The evaluation included the following assessments: Quality of Life Interview, the Expanded Brief Psychiatric Rating Scale, Alcohol Use Scale, Drug Use Scale, Addiction Severity Index and the Substance Abuse Treatment Scale. The participants were also questioned on their housing situation and the number of days that they used drugs or alcohol or in the past six months.

Among the many characteristics measured at baseline, the two groups had similar rates of co-occurring substance use disorders, but the bipolar participants were older, had fewer symptoms of anergia and disorganization. The bipolar group had higher scores than the schizophrenic group on the Substance Abuse Treatment Scale (a higher score means more progress in treatment and movement toward a long-term remission), was more likely to have a competitive job and had lower scores on several measures of quality of life. Over time the full group improved on almost every measure, but the bipolar participants showed greater gains (significant group by time interactions) in terms of staying out of the hospital, achieving independence and on several measures of quality of life. The bipolar group also improved on overall recovery score more than the schizophrenia group. Thus, bipolar patients started with better functioning and also improved more over time.

Patients dually diagnosed with psychosis and a substance use disorder typically have poorer outcomes than patients diagnosed with either disorder alone (Drake, 1993). When compared with schizophrenic patients without substance abuse, patients with both disorders have shorter lengths of hospital stay, which may be due to premature discharges (Rosenthal, 1992),

more relapses to psychiatric illness (Ridgeley, 1990), a higher rate of rehospitalization (Lyons, 1989), and more episodes of violent and suicidal behavior (Ridgeley, 1990). Among patients with bipolar disorder, Greenfield et al. (1993) treated dually diagnosed patients and noted that they: 1) often have a poor clinical course; 2) are difficult to properly diagnose; 3) are likely to need treatments that emphasize both support and confrontation; and 4) require services that are typically provided in different sectors of the mental health care system. They go on to suggest that the crucial challenge in the treatment of these patients is building their motivation and sustaining their involvement in a long-term process of healing and self-discipline.

Racial and Cultural Issues

In a supplement to the 1999 Surgeon's General Report on Mental Illness entitled, *Mental Health: Culture, Race, and Ethnicity* (DHHS, 2001) the authors begin by acknowledging that the field of mental health is plagued by disparities in the availability of and access to its services. Racial and cultural diversity, age, and gender provide the lenses in which these differences are viewed. Based on the 1999 Surgeon General's Report it is estimated that about 21% of adults and children in the US suffer from a major mental disorder (DHHS,1999). This prevalence applies to all communities, regardless of race, class or ethnicity. However, they believe that this does not apply to people who are in vulnerable, high-needs subgroups like the homeless, incarcerated, or institutionalized. And it is important to realize that mental illness is often overrepresented in these subgroups. Furthermore, there has been insufficient research on other ethnic groups like American Indians, Alaska Natives, Asian Americans, and Pacific Islander.

The Supplement identifies several disparities affecting mental health care of racial and ethnic minorities compared with whites:

- Minorities have less access to, and availability of, mental health services.
- Minorities are less likely to receive needed mental health services.
- Minorities in treatment often receive a poorer quality of mental health care.
- Minorities are underrepresented in mental health research.

A study by Schnittker, et al (2000), as part of the General Social Survey examined and compared the perceptions of the etiology and treatment of mental health among whites and blacks. As part of the study 1444 individuals were presented with a series of four vignettes, each with the description of a hypothetical person with some sort of mental illness. The vignettes featured a variety of different people – people of different races, sex, age, education, and income. For each vignette, the individuals participating in the study were given a set of six possibilities for the cause of the person's illness and had to select the one that they thought was the most likely cause. The causes included genetics, chemical imbalance, bad character, environment/rearing, life stressors, and God's will. The study participants were then given a set of treatment options that included going to a general practice doctor, psychiatrist, counselor, taking prescription medications, and going to a mental hospital.

The results found that blacks were less likely to accept genetics as an explanation for mental illness than whites, but blacks were likely to accept the idea of a chemical imbalance. Blacks were more likely to acknowledge that life stressors cause mental illness, but not family upbringing. The authors propose that blacks are less likely to embrace the genetic cause of mental illness due to the history of genetic theories to prove the inferiority of blacks. The authors also believe that beliefs about the etiology of the mental illness affect the negative attitudes about professional treatment for mental illness among blacks, when compared with whites. The authors conclude that the difference in attitudes toward mental health among whites

and blacks is possibly part of a bigger political debate about race, as well as a difference about seeking professional help (Schnittker, 2000).

The National Medical Association issued an article about the impact of racism on mental health (Carter, 1994). The author contends that as recently as the early 1990s the treatment conceptual framework of many mental health professionals remains inappropriate and dysfunctional for African-American patients. Non-African-American mental health scholars have exaggerated the dynamics of violence and sexuality of African Americans to the exclusion of the psychodynamics of mental disorders and the relationship of racism to emotional distress. For many years, children from female-headed African-American families have been considered to be untreatable by some child psychiatry programs and consequently, as medications became available, African Americans have been disproportionately provided only pharmacotherapy (Carter, 1994). While pharmacotherapy is a valuable form of treatment in psychiatry, this modality can be challenged by the fact that African Americans are not routinely included in clinical trials.

National Initiatives

NIMH and SAMHSA

Most community health efforts are administered at a state, county, or other local level. The National Institute of Mental Health (NIMH) and the Substance Abuse and Mental Health Services Administration (SAMHSA) are the two leading federal mental health agencies. NIMH is part of the federal government of the United States and the largest research organization in the world specializing in mental illness. It is one of the 27 component organizations of the National Institutes of Health (NIH), which is in turn part of the U.S. Department of Health and Human

Services. The stated mission of NIMH is to transform the understanding and treatment of mental illnesses through basic and clinical research, paving the way for prevention, recovery and cure. NIMH is particularly known for studies of genetics, neuroscience, and clinical trials of psychiatric drugs (NIMH website, 2010). SAMHSA was founded in 1992 as part of a reorganization of the Federal administration of mental health services; the Alcohol, Drug Abuse, and Mental Health Administration (ADAMHA) was abolished and its service components were transferred to the newly-organized SAMSHA. SAMHSA provides a number of services, including block grants to agencies throughout America, publicity campaigns, and data analysis for system reform, policy, and programs (SAMSHA website, 2010).

1999 Surgeon General's Report

In 1999 the first ever Surgeon General's Report on Mental Health was issued. In the United States, mental disorders collectively account for more than 15% of the overall burden of disease from all causes and slightly more than the burden associated with all forms of cancer (Murray & Lopez, 1996). These data underscore the importance and urgency of treating and preventing mental disorders and of promoting mental health in our society. The report provides an up-to-date review of scientific advances in the study of mental health and of mental illnesses that affect at least one in five Americans. Several important conclusions may be drawn from the extensive scientific literature summarized in the report. One is that for the clearly defined mental and behavioral disorders, efficacious treatments exist. Also, every person should be encouraged to seek help when questions arise about mental health, just as each person is encouraged to seek help when questions arise about health. Research highlighted in the report demonstrates that mental health is a facet of health that evolves throughout the lifetime. Just as each person can do

much to promote and maintain overall health regardless of age, each also can do much to promote and strengthen mental health at every stage of life (DHHS, Office of the US Surgeon General, 1999).

Much remains to be learned about the causes, treatment, and prevention of mental and behavioral disorders. Obstacles that may limit the availability or accessibility of mental health services for some Americans are being dismantled, but disparities persist. The report identified stigma as the most formidable obstacle to future progress in the arena of mental illness and health. In the words of Surgeon General, Dr. David Satcher, "Stigmatization of mental illness is an excuse for inaction and discrimination that is inexcusably outmoded in 1999," (DHHS, Office of the US Surgeon General, 1999).

The burden of mental illness on health and productivity in the United States and throughout the world has long been greatly underestimated. Data developed by the massive Global Burden of Disease study, conducted by the World Health Organization, the World Bank, and Harvard University, reveal that mental illness, including suicide, ranks second in the burden of disease in established market economies, such as the United States. Mental illness emerged from the Global Burden of Disease study as a surprisingly significant contributor to the burden of disease. The measure of calculating disease burden in this study, called Disability Adjusted Life Years (DALYs), allows comparison of the burden.

The report concluded with the following course of action:

1. Continue to Build the Science Base
2. Overcome Stigma
3. Improve Public Awareness of Effective Treatment
4. Ensure the Supply of Mental Health Services and Providers
5. Ensure Delivery of State-of-the-Art Treatments

6. Tailor Treatment to Age, Gender, Race, and Culture
7. Facilitate Entry Into Treatment:
8. Reduce Financial Barriers to Treatment:

President's New Freedom Commission on Mental Health (2002/2003)

President George W. Bush established the President's New Freedom Commission on Mental Health in April 2002 as part of his commitment to eliminate inequality for Americans with disabilities. The President directed the Commission to identify policies that could be implemented by Federal, State and local governments to maximize the utility of existing resources, improve coordination of treatments and services, and promote successful community integration for adults with a serious mental illness and children with a serious emotional disturbance (President's New Freedom Commission on Mental Health 2003).

From June 2002 to April 2003, the 22 Commissioners met monthly to analyze the public and private mental health systems, visit innovative model programs across the country and hear testimony from the systems' many stakeholders, including dozens of consumers of mental health care, families, advocates, public and private providers and administrators and mental health researchers. The Commission received feedback, comments and suggestions from nearly 2,500 people from all 50 states via personal testimony, letters, emails and a comment section on its website. In addition to public comment, the Commission consulted with nationally recognized professionals with expertise in diverse areas of mental health policy. The Commission established 15 subcommittees to examine specific aspects of mental health services and offer

recommendations for improvement (President's New Freedom Commission on Mental Health 2003).

The final report contained six major goals:

1. Mental Health is Essential to Health – The resulting recommendations include increasing mental health awareness and aligning federal policies to mental health goals.

2. Early Mental Health Screening and Treatment in Multiple Settings – Putting more of an emphasis on early detection and use common venues like child welfare and juvenile detention to identify those who need screening.

3. Consumer/Family Centered Care: Providing consumers and families with the necessary information and the opportunity to exercise choice over the care decisions that affect them.

4. Best Care that Science Can Offer -- Accelerate research to cure or prevent mental illness. Continue research to improve mental health outcomes and support recovery.

5. Information Infrastructure: The mental health system will develop and expand its information infrastructure. That infrastructure has many purposes: to inform consumers, providers and public policy and to improve access, quality, and accountability.

6. Eliminate disparities in mental healthcare**:** promote well-being for all people regardless of race, ethnicity, language, place of residence, or age and ensure equity of access, delivery of services, and improvement of outcomes for all communities.

Goal Number Four – Best Care that Science Can Offer – included an emphasis on evidence-based practice and the emerging mental health concept of recovery. After a brief discussion of the application of evidenced-based medicine in mental health, there will be a lengthy discussion on the concept of mental health recovery.

Evidenced-Based Medicine

Evidenced-based medicine is a movement toward scientifically grounded treatment approaches (Frese, 2001). The core set of evidenced-based practices include: medications

prescribed within specific parameters, training in illness-self management, assertive community treatment, family psycho-education, supported employment and integrated treatment for co-occurring substance abuse disorders (Drake, 2001). Research has shown that routine mental health programs often do not provide evidenced-based treatment to their consumers (Leff, 1994). Furthermore, it is important that the treatment offered is genuinely evidenced-based and not just a service that resembles an evidenced-based treatment. (Drake, 2001). Drake refers to this as having a high fidelity to the practice model.

Over the past thirty years consumer advocacy groups have emerged as a force in shaping the treatment agenda. Advocacy groups, like NAMI (National Alliance for the Mentally Ill) have strongly championed the cause of evidenced-based treatment (Frese, 2001). This new consumer-focused paradigm emphasizes helping patients achieve outcomes such as independence, employment, satisfying relationships, and a good quality of life; which is different from the traditional outcomes of treatment compliance and prevention of relapse or re-hospitalization (Drake, 2001).

The implementation of these practices is no small endeavor. First, evidence-based treatment must be clearly defined. Open clinical trials, which lack independent comparison groups, are not generally considered to provide sufficiently strong scientific evidence. Clinical observations collected as expert opinion also provides insufficient scientific evidence. The Agency for Healthcare Research and Quality (AHRQ) has identified levels of scientific evidence, which they use to score evidence-based practices. The guidelines, developed in the 1990s, identify three levels of evidence: Level A refers to good research evidence, with some expert opinion, Level B refers to fair research-based evidence with substantial expert opinion, and Level C denotes a recommendation based solely on expert

opinion, with little research-based evidence. The APA (American Psychiatric Association) has also developed guidelines. There are also consensus guidelines developed by a consortium of agencies.

Because a treatment decision is often a complex, multi-step process that depends on the patient's response at each step, treatment algorithms have been established. These algorithms map out a series of decision points, based on responses from previous steps. A current challenge in algorithm development is that scientific evidence supporting successive steps becomes increasingly thin. So even the most evidenced-based algorithms typically begin with steps supported by multiple clinical trials and evolve into steps defined through expert consensus (Drake, 2001).

Implementation of evidenced-based practice is often done through detailed written materials, web-based resources, training experiences, and consultation opportunities packaged as implementation toolkits. To maximize the likelihood of a successful implementation, the system of care must have adequate resources, must be reasonably organized, and the efforts of stakeholders must be aligned to support the practices (Torrey, 2001). Finally, once an evidenced-based practice has been established, organized practice feedback will help stakeholders maintain and extend the gains.

Recovery Model

Introduction

Implicit to the recovery model is the ideas that recovery is a measured outcome of the treatment plan. Recovery as an outcome is also rooted in the idea of empowerment – setting an

expectation that the consumer has the capacity to influence the outcome, letting consumers define and pursue their own life goals. In this context recovery is not explicitly defined in the literature; some feel that defining recovery success for others could be disempowering (Torrey, 2005).

Since the President's report in 2003, the concept of recovery (which had been introduced in the early 1990s) began to spread throughout those providing mental health services. While many embraced this concept, others were frustrated that there seemed to be no consensus on the exact definition of recovery in this context. Davidson, et al (2005) sought to better clarify the concept of recovery. He first proposed four types of recovery: physical recovery, trauma recovery, addiction recovery, and mental health recovery. The Recovery model is centered on the belief that those with serious mental disorders can and do get better. It represents a paradigm shift where patients are encouraged to define their recovery. It is parallel to addiction recovery in that the consumer assumes increasing control over his or her psychiatric condition while reclaiming responsibility for his or her own life – a life that had previously been consumed by a mental disorder or controlled by others (Davidson, 2005). It should be noted that each consumer has a completely unique life experience and has a unique capacity for being empowered. Thus, outcomes will differ greatly among consumers.

Although there are differences among what constitutes recovery, the following three statements from leaders in this field seem to sum it up best:

1. Recovery involves the development of new meaning and purpose in one's life as one grows beyond the catastrophic effects of a psychiatric disability (Anthony, 1993)

2. Recovery refers to the real life experience of persons as they accept and overcome the challenge of the disability (Deegan, 1988)

3. Recovery is a process by which people with psychiatric disabilities rebuild and further develop important personal, social, environmental, and spiritual connections, and confront the devastating effects of discrimination through…empowerment (Spaniol and Koehler, 1994)

This new concept of recovery is different from the previous fifty years of treatment goals, which have been eradication of symptoms and illness, and maintenance of the person in the community (Davidson, 2005). The current mental health system is an academic one, based on professional expertise, with limited roles for consumers and family members. In this model mental illness is presented as brain disease, biochemical or genetic in nature; with treatments based on pharmaceuticals, and for which the prognosis is long-term maintenance. To the contrary, the recovery model has grown out of the life experiences of people who have a mental health diagnosis and through trial and error have learned what helps and what hinders. The recovery model puts far more emphasis on peer support and on daily life than on medical treatment per se, although such treatment is an important element for some people (The Evaluation Center, 2005).

One main difference between these two models is the distribution of power. In the medical model, professionals decide what the most important elements are, control funding, and determine research priorities. In this model, consumers play the role of the compliant patient who can only accept the treatments that are offered. On the other hand, patient expectations and roles for the recovery model have not been sufficiently researched. Furthermore, there are few opportunities to develop the evidence that they work. But consumers and survivors who have lived their own recovery experiences bear witness that supports such as help from peers, permanent integrated housing, educational and work opportunities, and, for some, medication and therapy, can lead to real changes that go far beyond maintenance. As people who have recovered often say, “We *are* the evidence!” (The Evaluation Center, 2005). Unfortunately,

only a small amount of research showing the value of self-help and peer support has been conducted. Some believe this hesitancy to conduct such research stems from the inherent bias of the research establishment toward more academic and professionally-operated models (The Evaluation Center, 2005).

Elements of the Recovery Process

Even though the concept of recovery is sometimes difficult to define and encompasses many different models and measures, there are three common themes: hope, taking personal responsibility, and getting on with life (Noordsy, 2002). Exposure to chronic, debilitating disease often results in a loss of hope. Those who struggle with sever mental illness are often impoverished, stigmatized, and excluded from many of the roles provided by their community. Even the process of complying with a treatment routine emphasizes the chronic nature of the disorder and makes some feel even more hopeless. Clients commonly describe a period of hopelessness prior to their recovery process (Deegan, 1988). Hope is an anchor that helps to ground many people, especially as they begin the recovery process. Although many find hope in some type of spiritual program, spirituality is not a requisite (Noordsy, 2002).

A paradox of recovery is that acceptance of an illness may help individuals to reduce its dominance in their lives (Kubler-Ross, 1975). Mead and Copeland (2000) observed that, the process of taking personal responsibility was often rooted in a fundamental shift in the client's relationship to their illness, health and wellness (Mead, 2000). Taking personal responsibility for health and wellness may precede or follow insight into the illness and the development of meaningful life roles and relationships. In fact, Mead, et al have observed some clients for whom better health and illness management developed out of their desire to function in life roles and

relationships that were particularly valuable to them. Embracing responsibility for their actions and life roles was associated with progress in recovery in consumer accounts and our clinical experience (Mead, 2000).

In a focus group, participants identified the encouragement to get on with their life beyond their mental illness as the professional attitude most helpful in promoting their recovery (Torrey, 2000). As a corollary to this finding, the participants also identified that it was important to acquire the skills needed to move on. For some consumers, the process of recovery includes shifting the identity of oneself from a patient with a disease to identifying oneself through one's roles in life, in the same way those without a chronic illness would do. Getting on with life also involves developing meaningful interpersonal relationships including those with family, friends, and intimate relationships. Structured activity is a crucial part of getting on with life. Most of the desire for structured activity is rooted in our Western culture that puts a high value on one's work role (Noordsy, 2002). In addition to this there is little doubt that having a structured activity leaves less time for thinking negative thoughts or participating in self-destructive activities. Finally, the last part of getting on with one's life involves recreation. This means that those in recovery began to participate in activities they formerly did not have access to, motivation for, or the right participate in. As these individuals shifted toward social inclusion, they increasingly viewed the activities as appropriate and reaped the benefits (Noordsy, 2002).

Recovery Measurement Tools

Perhaps the true utility of the recovery concept can be demonstrated by recovery measures, assessment tools that measure the degree of one's recovery. If defining recovery is

challenging, devising a way to measure recovery is even more complex. On November 3-4, 2004, there was an invitational conference, Measuring the Promise: Assessing Recovery and Self-Determination Instruments for Evidence-Based Practices. The conference brought together thirty consumer/survivor and non-consumer/survivor researchers. The purpose of the conference was to review instruments that measure 1) the degree to which consumers achieve recovery and components of recovery and 2) the degree to which programs, services and/or systems include processes thought to bring about recovery. The focus of the conference was to discuss measuring recovery for research and evaluation purposes related to evidence-based practices and systems improvement, and to identify a select number of instruments to be used for these purposes (The Evaluation Center, 2005).

Discussion among the participants revealed the following areas of concern and potential obstacles in measuring recovery, which were debated without conclusion.

- How do we measure recovery when there is not a common definition of recovery?
- Where do we measure recovery, i.e. in the person, community, or the program?
- How do we account for program and staff values when measuring recovery?
- How do we take into account stages of recovery?
- How do we guard against individual's recovery scores being misused, e.g., the politics of scoring?
- What constitutes evidence? (qualitative versus quantitative)

In addition to identifying obstacles, the conference participants developed a set of "next steps" in order to promote measurement that is recovery oriented and supportive of recovery oriented programs and systems (The Evaluation Center, 2005).

- Contact collaborating organizations (e.g., consumer technical assistance centers, the National Technical Assistance Center for State Mental Health Planning, the National Association of State Mental Health Program Directors Research Institute, Inc., the Mental Health Statistics Improvement Project) to discuss the possibility of reconvening a consumer advisory research work group.

- Support testing of the discriminative validity of instruments, i.e. the ability of instruments to discriminate among persons recovered to different degrees or in different stages of recovery.

- Provide education and raise consciousness about recovery and its measurement to stakeholders.

- Partner with conference participants and others (e.g., states) to help design and implement a multisite study to further test instruments, i.e. bottom up research approach.

Recovery Measurement Tools

The conference participants identified nine instruments measuring recovery, which are listed in Table 1.

Table 1. Measures of Individual Recovery
1. Consumer Recovery Outcomes System (CROS 3.0)
2. Illness Management and Recovery (IMR) Scales
3. Mental Health Recovery Measure (MHRM)
4. Ohio Mental Health Consumer Outcomes System
5. Peer Outcomes Protocol (POP)
6. Reciprocal Support Scale
7. Recovery Assessment Scale (RAS)
8. Recovery Measurement Tool Version 4 (RMT)
9. Relationships and Activities that Facilitate Recovery Survey (RAFRS)

The current study will focus on the application of the Mental Health Recovery Measure (MHRM) instrument. The MHRM was created by Drs. Young and Bullock in 2003. This self-report instrument is designed to comprehensively assess the recovery process for individuals with serious mental illness. The current level of the respondent's recovery is assessed without relying on the measurement of symptoms or symptom management (The Evaluation Center, 2005). The MHRM has the following seven sub-scales; the number in parentheses represents the number of questions devoted to each sub-scale.

- Overcoming Stuckness (4)
- Self-Empowerment (4)

- Learning and Self-Redefinition (4)
- Basic Functioning (4)
- Overall Well-Being (4)
- New Potentials (4)
- Advocacy/Enrichment (4)
- Spirituality[1] (2)

The content of the MHRM and the MHRM subscales are based upon a specific conceptual model of mental health recovery that is grounded in the recovery experience of persons with psychiatric disabilities (Young, 1999). The development of the MHRM was based on the experiences of individuals with psychiatric disabilities and involved a grounded theory analysis of qualitative data to develop a model of recovery based upon these experiences. The model was informed by 18 interviews in which individuals with psychiatric disabilities who discussed their recovery experiences, which was recorded in a narrative format (Young, 1999). In order to ensure a sample that would represent the end-users, twenty-eight percent of the sample were African-American. Reliability and Rasch modeling (Rasch, 1980) resulted in a series of revisions to the original instrument, which was adapted to a 41-item scale and later revised to its current 30-item version. All items are rated using a 5-point Likert scale that ranges from "strongly disagree" to "strongly agree" that are scored from 0-4. Thus the total score can range from 0 to 120. In practice, scores have been obtained in the range from 22 – 120. The mean for the Total MHRM = 80 (SD=20), based on an average Total MHRM score for N=215 individuals drawn from five community mental health center sites and two community-based sites that provide peer support for individuals with serious mental illness (The Evaluation Center, 2005).

Subsequent development of the MHRM has involved testing and use with over 200 mental health consumers in a variety of inpatient, forensic, and community mental health

[1] Not currently established as a subscale

settings. The most recent normative sample (N=279) included the following percentages of minority representation: African-American 24%; Latino 4%; Mixed Ethnicity 7%; Asian .5%. No significant differences were found between ethnic groups for the mean total MHRM score, although the mean for African-Americans (M=83) was slightly higher than the mean for Whites (M=78) in this sample. The mean across all ethnic groups for Total MHRM = 80 (SD=20). The MHRM is intended for use and has been tested with consumers who receive services in the following service settings: criminal justice system, inpatient setting, outpatient service setting, peer-run program, and residential service setting. The instrument can be self-administered, takes about 5 minutes to complete and has a Flesch-Kincaid Reading Level of Grade 7.7 (The Evaluation Center, 2005).

Reliability

Internal Consistency of the MHRM analyses are based on responses from 279 mental health consumers. The MHRM total score had an alpha of 0.93, with alphas ranging from 0.60 for overcoming stuckness to 0.89 for spirituality (Table 2) (The Evaluation Center, 2005).

Table 2. MHRM Subscale MHRM Subscale Internal Consistency

Subscale	Alpha
Overcoming Stuckness	.60
Self-Empowerment	.82
Learning and Self-Redefinition	.79
Basic Functioning	.62
Overall Well-Being	.86
New Potentials	.62
Advocacy/Enrichment	.66
Spirituality[2]	.89

[2] Not currently established as a subscale

Test-Retest Reliability was estimated in a small sample (N=18) of mental health consumers completed the MHRM at one-week and two-week test interval. The 1-week test-retest reliability was 0.92 and the 2-week test-retest reliability 0.91 (The Evaluation Center, 2005).

Validity

Face Validity: The item content was developed from statements made by consumers describing their recovery process.

Relationship to Established Measures: Correlations between the MHRM total score and scores on related measures are shown in Table 3. The correlations between the MHRM total score and measures of empowerment and resilience (Breedlove, 2005) were calculated using data collected from mental health consumers (N=150) drawn from two community mental health center sites. The correlation between the MHRM total score and community living skills/activities of daily living has also been measured (N=180) (Bullock, 2003).

Table 3. Correlations between MHRM Total Score and Other Measures

Measure	r	N
MHRM and the Empowerment Scale (Rogers, Chamberlin, Ellison, & Crean, 1997)	.67	150
MHRM and the Conner-Davidson Resilience Scale (Connor & Davidson, 2003)	.73	150
MHRM and the Resilience Scale (Wagnild & Young, 1993)	.75	150
MHRM and the Community Living Scale (Smith & Ford, 1990)	.57	180

Relationship to Other Criteria: The MHRM has been shown to discriminate between groups of individuals at different levels of recovery based on participation in treatment or recovery programming (Bullock, 2002). The MHRM has been shown to demonstrate significant

change (improvement) for individuals following completion of an evidence-based practice (the "Illness Management and Recovery") program designed to promote recovery (Bullock, 2005).

The use of the MHRM as an outcome measure is continuing to be evaluated. Normative data for the MHRM are continuing to be collected across different sites and with different mental health consumer populations.

Chapter III – Methods

Study Overview

The concept and development of assessments to measure the recovery of those suffering from mental illness emerged in the 1990's. There are currently nine unique assessments to measure recovery. Up until this point there has been little empirical research about the outcomes of implementing these measures in a large population. With such a small amount of prior research to use as a basis for this study, an observational study design was chosen. This observational study examines longitudinal data related to new consumers of the DeKalb Community Service Board (DeKalb CSB) who took the Mental Health Recovery Measure (MHRM, Bullock & Young, 2003) assessment. As with any observational study, the goal is to generate hypotheses that can be applied to future work. It is hoped that the results of this study will contribute to the ongoing mental health recovery research.

Study Population

DeKalb CSB has 12 locations that serve 10,000 patients with mental illness, substance abuse, and developmental disabilities. Approximately 150 new consumers arrive every month. Unfortunately, there is currently no method for tracking consumers who drop out each month. However, because the consumer census consistently remains around 10,000 it can be inferred that approximately 150 existing consumers drop out each month. Most consumers are walk-ins or are referred from the nearest state mental hospital (GRH-Atlanta), the Georgia Crisis and Access Line (GCAL), and the DeKalb CSB Crisis Center and Central Access Line. Seventy percent of the DeKalb CSB population is African American**.** Like most people who rely on

community mental services, the consumers of DeKalb CSB have an unemployment rate that is at least 3-5 times that of the general population and are disproportionately uninsured. Even when if they are insured it is usually through Medicare or Medicaid. For this study, only patients with primary diagnoses of mental health or substance abuse disorders were considered.

Test Instrument

The Mental Heath Recovery Measure (MHRM) contains 30 items. All items are rated using a 5-point Likert scale with responses that range from "strongly disagree" to "strongly agree." Aside from the two items that measure spirituality, the majority of items have been established as subscales to measure one of seven domains: Overcoming Stuckness, Self-Empowerment, Learning and Self-Redefinition, Basic Functioning, Overall Well-Being, New Potentials, and Advocacy/Enrichment. Each of these seven domains is comprised of four items. Six of the 7 domains were developed from a grounded theory analysis (Glaser & Strauss, 1967) of qualitative recovery interview data. Further psychometric analyses based on the responses from mental health consumers informed the development of the current item content and subscale structure of the MHRM (The Evaluation Center, 2005).

The item content of the MHRM and the MHRM subscales are based upon a specific conceptual model of mental health recovery that is grounded in the recovery experience of persons with psychiatric disabilities (Young & Ensing, 1999). The conceptual subscales that emerged in understanding the recovery process were: Overcoming Stuckness, Self-Empowerment, Learning and Self-Re-definition, Basic Functioning, Overall Well-Being, and New Potentials. Spirituality and Advocacy/Enrichment are also recovery processes that are

assessed by the MHRM. It should be noted that in the current study, the subscale data was not analyzed – only the total score was analyzed.

Data Collection

Beginning in December 2008 implementation of the MHRM recovery measure began to roll out. Staff members at each of the DeKalb CSB locations were trained in administration of the MHRM; the test can be self-administered or given by a trained staff member. For all consumers (new and existing) the MHRM was given upon initial intake, then again after 90 days, and then every 180 days on an ongoing basis. The ongoing semi-annual administration of the MHRM is conducted as part of the existing recertification process. DeKalb CSB consumers must recertify for services every 180 days. During this time a staff member reviews the case file and ensures that the consumer is still eligible for services; failure to recertify results in termination of services. The data collection period for this study was December 2008 through December 2009. Each record included demographic data, diagnosis data, MHRM score data, and data on the time duration between assessments. The demographic data consisted of age, sex, and race. Income data was not included because much of it was missing.

For the purposes of this study, only new consumers were considered. This is because, generally, new consumers are starting off at the same point in the recovery process. On the contrary, existing consumers have a large variation of progress in the recovery process, and mixing these unique populations may skew the results. During the study period 1762 new consumers completed an initial MHRM assessment. Of these consumers 960 completed a second assessment during the study period. The duration between assessments varied greatly – from 1 day to over 400 days. Only cases with time duration between one and 6 months were

considered; 229 cases were eliminated because they did not meet this criterion. Of the remaining 732 cases only those with a valid diagnosis were considered. One case that was without a diagnosis was eliminated for a total of 731 cases that completed 2 assessments.

Out of the 960 consumers who completed two assessments, 196 new completed three assessments within the study period. Only cases with time duration between one and 9 months were considered; 14 cases were eliminated because they did not meet this criterion. Of the remaining 182 cases only those with a valid diagnosis were considered. One case that was without a diagnosis was eliminated for a total of 181 cases that completed 3 assessments.

Definition of Variables

The following is a definition of terms used in this study. Self-explanatory variables like age, sex, race, were not included.

- Diagnosis – Primary psychiatric diagnosis. Consumers may have an additional secondary or tertiary diagnosis, but only the primary diagnosis was considered for this study.
- $\Delta_{1,2}$ – Difference in score between assessment 1 and assessment 2
- $\Delta_{2,3}$ – Difference in score between assessment 2 and assessment 3
- Location of Second Assessment – DeKalb CSB location where the second assessment occurred. Because these are new consumers, most of the first time assessments were conducted at Central Intake. The location of second assessment better reflects the geographic location of the consumer.

Data Analysis

The data analysis was done using SPSS 12.0. The data analysis was limited to the differences in total scores ($\Delta_{1,2}$ and $\Delta_{2,3}$). Analysis of sub-scale data was not included in this study because DeKalb CSB staff wanted to see the results of the total score analysis before

analyzing sub-scale data. For both groups: 2 assessments (N=731) and 3 assessments (N=181), demographic data was generated that included: age, race, sex, diagnosis, and location of service. A one-way ANOVA was run to determine if there were significant differences in the values of $\Delta_{1,2}$ and $\Delta_{2,3}$ within each demographic group. A paired sample t-test was run to determine if there was a significant difference in the pre-and post-test values. Correlation coefficients were also generated. Two plots were generated. One plot showed the score difference ($\Delta_{1,2}$ and $\Delta_{2,3}$ respectively) as a function of diagnosis. The second plot showed the score difference as a function of time interval. The mean values for each group were denoted, along with the confidence interval. A one-way ANOVA was run to determine if there was a significant difference in score difference among the time intervals.

For those who have taken the MHRM twice the authors of the MHRM defined a significant score increase or decrease as a net change in score of 10 points or greater. Those who had a net change of less than ten were described as having no significant increase or decrease. The distribution of significant increase, significant decrease, or no significant increase/decrease was calculated for each demographic variable. A Chi-squared analysis was done to reveal any differences within the groups that for each variable.

Two additional analyses were done, but only for those who completed three assessments. The first analysis examined the $\Delta_{2,3}$ as both a function of the time interval between assessments and the length of time as a DeKalb CSB consumer. This was done isolating the consumers who had 1 to 4 months between assessments 2 and 3. On average these consumers had the highest difference in score between assessments 2 and 3. An analysis was done to see how many of these consumers were still within the first 4 months of service, where the level of service is high. This was done in an attempt to see the how much the level of service influenced the score results.

Chapter IV – Results

Of the 960 consumers who completed 2 assessments, only 731 met the inclusion criteria for the analysis. Table 4 shows the descriptive statistics across all demographic variables.

Table 4. Descriptive Statistics of the Study Population with Two Completed Assessments, $\Delta_{1,2}$

Study Variable	N	%
Age (N=731)		
19-30	170	23.3
31-40	170	23.3
41-50	197	26.9
51-60	158	21.6
60+	36	4.9
Sex (N=731)		
Female	461	63.1
Male	270	36.9
Race (N=731)		
Black	499	68.3
White	182	24.9
Other	50	6.8
Diagnosis (N=720)		
Substance Abuse	58	8.1
Bipolar	98	13.6
Major Depression	213	29.6
Mood, Other	97	13.5
Schizophrenia	68	9.4
Psychotic, Other	32	4.4
PTSD	31	4.3
Anxiety	73	10.1
Other	50	6.9
Location of Second Assessment (N=731)		
Site #1	32	4.4
Site #2	235	32.1
Site #3	123	16.8
Site #4	132	18.1
Site #5	193	26.4
Other	15	2.1

A One Way ANOVA was done for each demographic variable to see if there were statistically significant differences among the groups on the MHRM. The results of the One

Way ANOVAs can be found in Table 5. It is clear that there are no significant differences among the groups within each demographic variable.

Table 5. One Way ANOVA Results for Each Demogrpahic Variable and $\Delta_{1,2}$

Variable	F	Sig.
Diagnosis	0.93	0.66
Sex	1.06	0.35
Race	1.10	0.26
Age	1.06	0.33
Location of 2nd Assessment	0.90	0.74

Tables 6 and 7 show statistics for the score differences between assessment 1 and assessment 2 ($\Delta_{1,2}$) and the results of a matched-pair analysis. By definition a 10 point differential in score denotes a significant change. The mean difference fell below this benchmark for significant results (6.56, 19.75). Based on the p-value in Table 13, it is clear that there is a significant difference between Score1 and Score 2.

Table 6. Descriptive statistics for the MHRM at assessment 1 and 2.

Score	Mean	N	Std. Deviation	Std. Error Mean	Correlation	p-value
MHRM Score 1	66.69	731	22.96	0.85	0.60	<0.001
MHRM Score 2	73.18	731	20.96	0.78		

Table 7. Paired sample t-test results for mean MHRM and assessment 1 and 2.

Mean	Std. Deviation	95% Confidence Interval of the Difference		t	df	p-value (2-tailed)
		Lower	Upper			
6.50	19.75	5.06	7.93	8.89	730	<0.001

The score difference ($\Delta_{1,2}$) was plotted both as a function of diagnosis and time interval between assessments. The results are shown in Figures 1 and 2. Although there was a variation in scores by diagnosis, these differences were not statistically significant, as determined by the one-way ANOVA in Table 5.

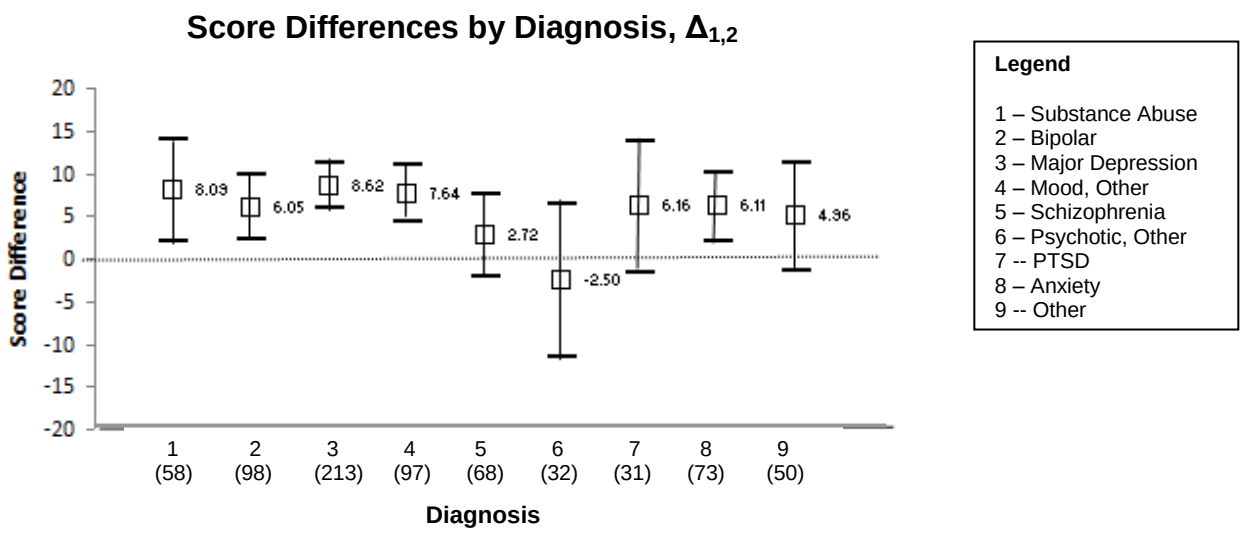

Figure 1. Score Differences ($\Delta_{1,2}$) by Diagnosis

The score differences as a function of time interval between assessments (Figure 2) shows a definitive pattern. For consumers who took the second assessment within 4 months of the first, the average score difference $\Delta_{1,2}$, was 7.27 (range of 7.16-7.43). This score difference drops off after four months. A one-way ANOVA (Table 8) was done to determine if there were statistically significant differences among the 5 groups (representing the 5 time intervals between assessments). The one-way ANOVA determined that there were no statistically significance differences among the groups.

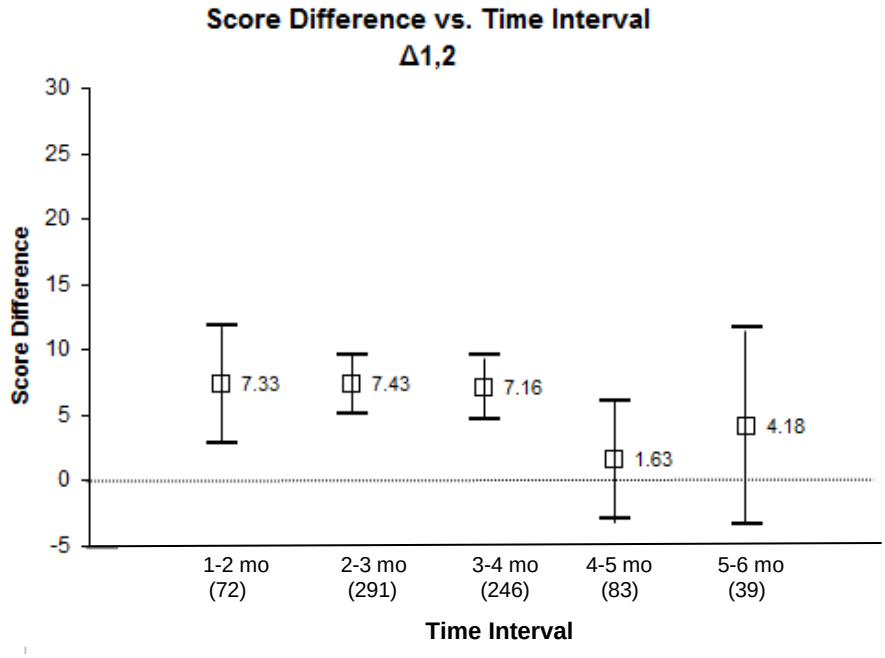

Figure 2. Score Differences ($\Delta_{1,2}$) by Time Interval

Table 8. One Way ANOVA Results for the Time Interval

Variable	F	Sig.
Time Interval	1.01	0.46

As previously mentioned, the MHRM authors define a significant increase in score as +10 points and a significant decrease in score as -10 points. An analysis was done to look at the distribution of significant scores for each demographic variable. A Chi-squared analysis was done to reveal any statistically significant differences between the groups of each demographic variable. The results are shown in Table 15. The overall distribution of results for all 731 consumers was 19.3% who had a significant decrease, 41.0% who had neither a significant increase or decrease, and 39.4% who had a significant increase.

Table 9. Distribution of "Significant Score Change" by Study Variable, $\Delta_{1,2}$

Study Variable	Significant Decrease (10 pt decrease or greater)	No Significant Change (net change less than 10)	Significant Increase (10 pt increase or higher)	χ^2	df	p
Race				8.79	4	0.07
Black	21.8	39.7	38.5			
White	15.4	41.8	42.9			
Other	8.0	52.0	40.0			
Age				3.72	8	0.88
19-30	20.6	39.4	40.0			
31-40	16.5	41.8	41.8			
41-50	18.8	43.7	37.6			
51-60	19.6	39.2	41.1			
60+	27.8	38.9	33.3			
Sex				0.91	2	0.63
Female	20.2	39.9	39.9			
Male	17.8	43.0	39.3			
Diagnosis				18.57	16	0.29
Substance Abuse	19.0	37.9	43.1			
Bipolar	21.4	39.8	38.8			
Major Depression	17.8	38.0	44.1			
Mood, Other	11.3	46.4	42.3			
Schizophrenia	25.0	48.5	26.5			
Psychotic, Other	31.25	37.5	31.25			
PTSD	25.8	38.7	35.5			
Anxiety	16.4	47.9	35.6			
Other	24.0	32.0	44.0			
Location of 2nd Assessment				13.29	10	0.21
Site #1	18.8	50.0	31.3			
Site #2	23.0	39.1	37.9			
Site #3	23.6	37.4	39.0			
Site #4	15.2	37.1	47.7			
Site #5	15.5	46.9	37.6			
Other	13.3	33.3	53.3			
All Cases	19.3	41.0%	39.4%			

The only demographic variable that was marginally significant was race, where those classified as "Other" had a smaller proportion with a significant decrease in MHRM scores compared to whites and blacks.

Of the 196 consumers who completed 3 assessments, only 181 met the inclusion criteria for the analysis. Table 10 shows the descriptive statistics across all demographic variables.

Table 10. Descriptive Statistics of the Study Population with Three Completed Assessments, Δ_{23}

Study Variable	N	%
Age (N=181)		
19-30	28	15.5
31-40	48	26.5
41-50	55	30.4
51-60	42	23.2
60+	8	4.4
Sex (N=181)		
Female	119	65.7
Male	62	34.3
Race (N=181)		
Black	112	61.9
White	59	32.6
Other	10	5.5
Diagnosis (N=181)		
Substance Abuse	11	6.1
Bipolar	32	17.7
Major Depression	58	32.0
Mood, Other	14	7.7
Schizophrenia	22	12.2
Psychotic, Other	9	5.0
PTSD	11	6.1
Anxiety	10	5.5
Other	14	7.7
Location of Second Assessment (N=181)		
Site #1	22	12.2
Site #2	60	33.1
Site #3	30	16.6
Site #4	32	17.7
Site #5	26	14.4
Other	11	6.1

A One Way ANOVA was done for each demographic variable to see if there statistically significant differences among the groups within each demographic variable. The results of the One Way ANOVAs can be found in Table 11. There were no significant differences among the groups within each demographic variable.

Tables 12 and 13 show statistics for the score differences between assessment 2 and assessment 3 ($\Delta_{2,3}$) and the results of a matched-pair analysis. By definition a 10 point differential in score denotes a significant change. The mean difference fell well below that benchmark (0.44, 18.45). Based on the p-value in Table 13, there is not a significant difference between Score 2 and Score 3.

Table 11. One Way ANOVA Results for Each Demographic Variable and $\Delta_{3,4}$

Variable	F	Sig.
Diagnosis	1.03	0.44
Sex	0.85	0.77
Race	0.74	0.90
Age	0.87	0.73
Location of 2nd Assessment	0.83	0.79

Table 12.
Descriptive statistics for the MHRM at assessment 2 and 3.

Score	Mean	N	Std. Deviation	Std. Error Mean	Correlation	Sig.
MHRM Score 2	74.34	181	19.72	1.47	0.57	<0.001
MHRM Score 3	74.77	181	20.22	1.50		

Table 13. Paired sample t-test results for MHRM at assessment 2 and 3.

Mean	Std. Deviation	95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
		Lower	Upper			
0.44	18.45	-2.27	3.14	8.89	180	0.75

The score difference ($\Delta_{2,3}$) was plotted both as a function of diagnosis and time interval between assessments. The results are shown in Figures 3 and 4. Although there was a variation in scores by diagnosis, these differences were not statistically significant, as determined by the one-way ANOVA in Table 11.

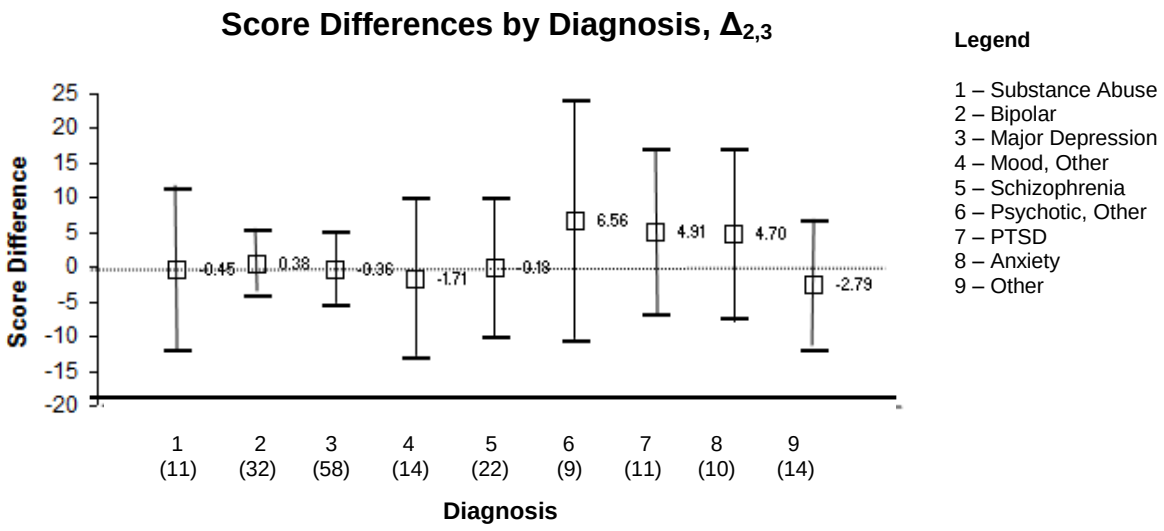

Figure 3. Score Differences ($\Delta_{2,3}$) by Diagnosis

The score differences as a function of time interval between assessments (Figure 4) shows a definitive pattern. For consumers who took the second assessment within 4 months of the first, the average score difference $\Delta_{2,3}$, was 3.44 (range of 1.23 to 6.33). This score difference drops off after four months. A one-way ANOVA (Table 14) was done to determine if there were statistically significant differences among the 7 groups (representing the 7 time intervals between assessments). The one-way ANOVA determined that there were no statistically significant differences.

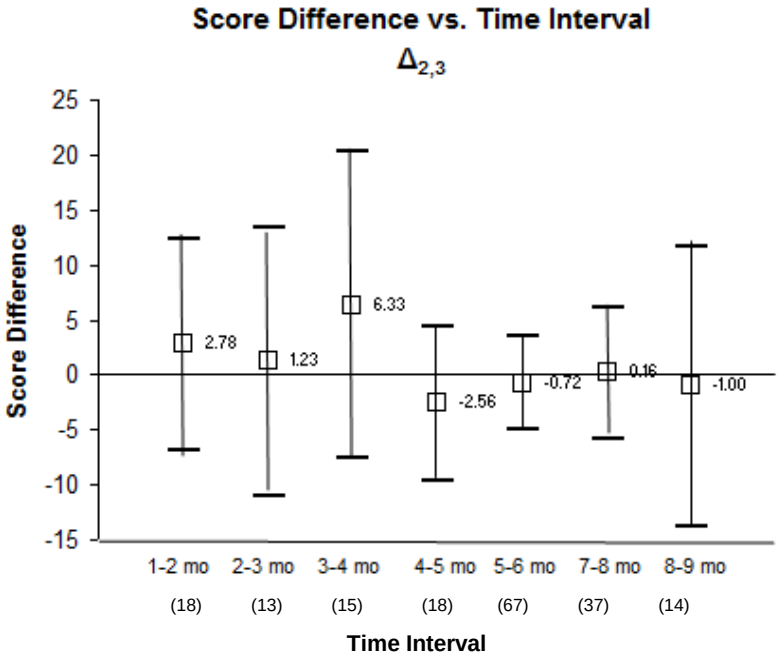

Figure 4. Score Differences ($\Delta_{2,3}$) by Time Interval

Table 14. One Way ANOVA Results for the Time Interval

Variable	F	Sig.
Time Interval	0.85	0.77

In both cases ($\Delta_{1,2}$ and $\Delta_{2,3}$) there was a drop off in the average score difference after 4 months. This could be directly related to service delivery trends at DeKalb CSB where most new consumers receive a large number of services in the first 3-4 months, and then this dramatically drops off. This certainly would explain the drop off in average score difference for $\Delta_{1,2}$ because if a consumer takes the second assessment after 4 months it will coincide with the drop in services and a drop in score difference could be expected. However, in the case of the $\Delta_{2,3}$ data it seems less likely that consumers were still in the first 4 months of service when

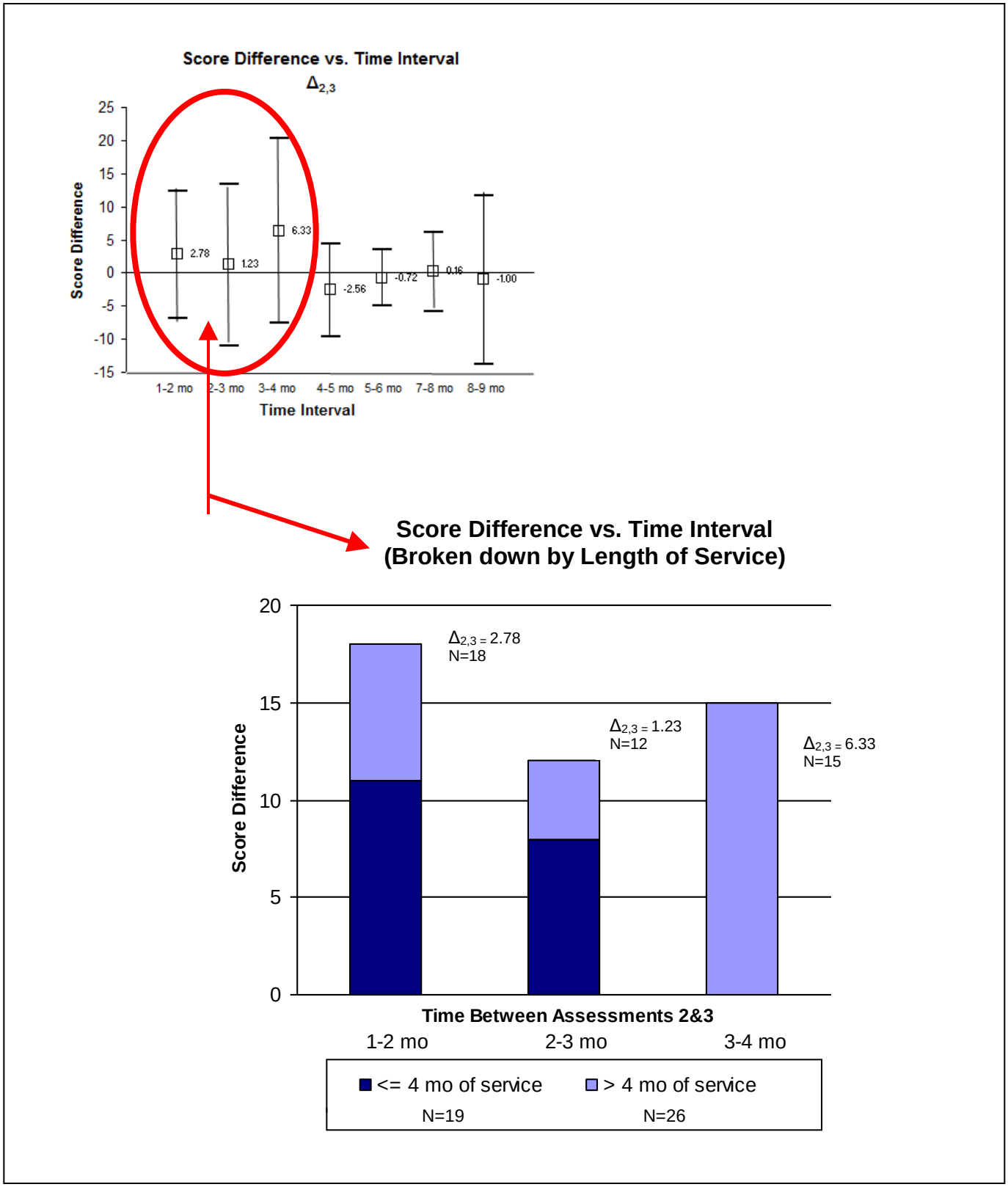

Figure 5. Analysis of Consumers Who Had 1 to 4 Months Between Assessments 2 and 3.

completing the third assessment. Still, there was a drop off in average score difference after four months. This trend was further examined by isolating the consumers who had 1 to 4 months between assessments 2 and 3. On average these consumers had the highest difference in score between assessments 2 and 3. An analysis was done to see how many of these consumers were still within the first 4 months of service, where the level of service is high. Nineteen consumers were still within the first 4 months of service, 26 consumers were not. In fact, in the time interval with the highest average score (3-4 months, $\Delta_{2,3}$=6.33) contained no consumers who were still within the first 4 months of service.

As previously mentioned, the MHRM authors define a significant increase in score as +10 points and a significant decrease in score as -10 points. An analysis was done to look at the distribution of significant scores for each demographic variable. A Chi-squared analysis was done to reveal any statistically significant differences within the groups of each variable. The results are shown in Table 21. The overall distribution of results for all 181 consumers was: significant decrease (26.5%), significant increase (27.6%) and no significant increase or decrease (45.9%). The Chi-squared analysis revealed no statistical differences among the groups within each study variable.

Table 15. Distribution of Significant Results by Study Variable, $\Delta_{2,3}$

Study Variable	Significant Decrease (10 pt decrease or greater)	No Significant Change (net change less than 10)	Significant Increase (10 pt increase or higher)	χ^2	df	p
Race				2.24	4	0.70
Black	30.4	43.8	25.9			
White	20.3	49.2	30.5			
Other	20.0	50.0	30.0			
Age				5.48	8	0.71
19-30	28.6	35.7	35.7			
31-40	27.1	41.7	31.3			
41-50	27.3	45.5	27.3			
51-60	26.2	52.4	21.4			
60+	12.5	75.0	12.5			
Sex				1.60	2	0.45
Female	23.5	47.9	28.6			
Male	32.3	41.9	25.8			
Diagnosis				19.04	16	0.27
Substance Abuse/Dependence	27.3	36.4	36.4			
Bipolar	15.6	62.5	21.9			
Major Depression	25.9	53.4	20.7			
Mood Other	42.9	28.6	28.6			
Schizophrenia	40.9	27.3	31.8			
Psychotic - Other	33.3	33.3	33.3			
PTSD	9.1	36.4	54.5			
Anxiety	10.0	60.0	30.0			
Other	35.7	35.7	28.6			
Location of 2nd Assessment				13.16	10	0.22
Site #1	18.2	45.5	36.4			
Site #2	31.7	38.3	30.0			
Site #3	23.3	43.3	33.3			
Site #4	25.0	59.4	15.6			
Site #5	30.8	50.0	19.2			
Other	18.2	45.5	36.4			
All Cases	26.5	45.9	27.6			

Chapter V – Discussion, Recommendations, and Conclusions

Discussion

The purpose of the current study was to observe the outcomes of implementing the MHRM assessment in the DeKalb County Community Service Board population. Seven hundred thirty-one consumers completed two assessments, 181 completed three assessments. The differences in scores were calculated and defined as $\Delta_{1,2}$ = Score 2 – Score 1 and $\Delta_{2,3}$ = Score 3 – Score 2. The results of the paired sample t-test ($\Delta_{1,2}$) revealed that the second MHRM score was significantly higher than the first score. This finding confirms what the MHRM authors found when administering the assessment among new consumers. This is because most new consumers take their initial assessment at time of crisis, despair, or emotional upheaval and their score usually reflects this. After a few months of treatment and services they are generally in a better place and have an increased score when taking the second assessment. The paired sample t-test ($\Delta_{2,3}$) showed no statistically significant difference between the second and third score. This is consistent with the results seen by Dr. Wesley Bullock MHRM co-author (personal communication, March 1, 2010). The average score difference between the second and third assessments are much smaller than that of the first and second assessments.

A one-way ANOVA revealed that there were no statistically significant differences in the score differences, $\Delta_{1,2}$ and $\Delta_{2,3}$ among the groups that comprised each demographic variable. This could mean that the current service delivery does not lead to an unfair bias in MHRM scores for any demographic group. This could also mean that the MHRM total score is too broad of a measure to reveal differences among demographic variables. Data analysis at the sub-scale level or individual question level could possibly reveal statistically significant differences among

the demographic variables. However, further analysis would have to be done to confirm either of these hypotheses.

Figures 1 and 3 further examines the score difference, $\Delta_{1,2}$, as a function of primary diagnosis. For most diagnoses, the average $\Delta_{1,2}$ ranged from 4.96 to 8.09 points. However, for those with schizophrenia the average $\Delta_{1,2}$ fell to 2.72 points, and for those with other psychotic disorders there was a negative score difference (-2.50). This exception can be explained by the mindset of most consumers with schizophrenia or other psychotic disorders. In their case, they usually enter treatment in an elevated state with psychosis distorting the reality around them. After initial treatment these consumers are more likely to be more grounded, which often is reflected in a modest increase or even a decrease in the second MHRM score. In Figure 3, most diagnoses have a $\Delta_{2,3}$ value between 0.38 and -2.79, with the exception of other psychotic illnesses, anxiety and PTSD which all have values between 4.70 and 6.56. These elevated score differences could be expected for those with other psychotic illnesses would begin to show progress in the third assessment, given that the initial assessment often reflects a distorted reality, and thus leaving the second assessment as a true baseline. It is less clear why there is an increase in those consumers with anxiety and PTSD.

Figures 2 and 4 show a plot of the average score difference ($\Delta_{1,2}$ and $\Delta_{2,3}$) as a function of time interval between the two assessments. In both cases there was a clear pattern that time intervals exceeding 4 months resulted in a decrease in $\Delta_{1,2}$ or $\Delta_{2,3.}$ As previously stated, Dekalb CSB consumers receive a high concentration of services during the first 3-4 months after initial intake; then the level of service drops off dramatically (personal communication with Fabio Van DeMewre, March 1, 2010). This mode of service delivery could explain the pattern seen in Figure 2 (average score difference for $\Delta_{1,2}$) because the decrease in average scores coincides

with the decrease in services. However, this observation does not completely explain the pattern that was seen in Figure 4 ($\Delta_{2,3}$). There was also a drop off in average score difference, but the starting point was assessment 2, not at intake. Therefore the correlation between decrease in services and decrease in average score difference is not as clear for $\Delta_{2,3}$.

A further analysis was done, examining those in the second cohort ($\Delta_{2,3}$) who had a time interval of 1 to 4 months between assessments 2 and 3. On average, these 45 consumers had much higher differences in scores than those consumers who had 5 to 9 months between assessments 2 and 3. Of these 45 consumers, 19 (42%) were within the first 4 months of service and 26 (58%) had exceeded this 4 months of service and had experienced a dramatic drop of service. Furthermore, the group that experienced the greatest average increase in score difference (3-4 month time interval between assessments) was comprised of consumers who were past the first 4 months of service.

These results raise the question: how much of the drop in average score difference after 4 months is due to the service delivery model and how much is due to other factors. It could be the time interval between assessments could have a direct impact on scores. This is true for some psychological assessment tools like the Beck Depression Inventory (BDI), (Longwell, 2005). It should be noted that the BDI diagnostic measurement is clearly much different from the MHRM. This example was cited only to demonstrate that it is possible for the time interval between assessments to influence score outcomes. A better understanding how the time interval between assessments influences score outcomes would require further research.

A key factor that determines how assessments are administered is the mode of service delivery. Inside the confines of a small private practice, it is much easier to guarantee that

patients have access to assessment tools and to ensure that assessments are given on a regularly scheduled interval. In a managed care setting, there is a small amount of empirical research, but it strongly suggests that the cost control measures could influence the use of assessment tools (Piotrowski, 1999).

The community mental health setting presents several challenges in administering psychological assessments. First, most agencies are run at a state or local level, with a great variation in the capacity to administer assessment tools (especially non-diagnostic assessments). In this case the term capacity encompasses not only financial and human resources, but also the data management expertise, and finally staff who can interpret the results and translate the results into more effective service delivery for the consumers. DeKalb CSB was able to implement the MHRM because of an existing strong data management team that had previously implemented electronic medical records for all consumers. DeKalb CSB also has staff with the expertise to apply new tools to the current practice, with the goal of improving service delivery and utilization. Second, even where the capacity exists, the irregularity of scheduled visits can limit the continuity in any assessment (like the MHRM) that collects longitudinal data. In this study, the first assessment was given at intake and the second one was scheduled in 90 days. The third and all other subsequent assessments were given on 180 day intervals. Of the 960 consumers who completed at least 2 assessments, only 537 (56%) completed the second assessment within a 60 to 120 day window. The remaining 423 consumers had time intervals between assessments that ranged from 1 to 400 days. Of the 196 consumers who completed 3 assessments, only 122 (62%) completed the third assessment within a 150 to 210 day window of the second assessment. The remaining 74 consumers had time intervals between the second and third assessments that varied from 1 to 500 days.

Clearly, the issue of this wide variation in testing intervals must be addressed. Some of the variation could be due to the fact that this is a newly implemented program and there could be a need for more training among DeKalb CSB staff. Another problem is that community mental health consumers may have trouble keeping appointments. In this case, missed appointments could delay the retesting of the MHRM assessment.

For those who have taken the MHRM twice, the authors of the MHRM defined a significant score increase or decrease as a net change in score of 10 points or greater. Those who had a net change of less than ten were described as having no significant increase or decrease in score. The distribution of significant increase, significant decrease, or no significant increase/decrease was calculated for each demographic variable. A Chi-squared analysis was done to reveal any differences within the groups for each variable (Tables 9 and 15). Just like the one-way ANOVA that was done for the score differences (Tables 5 and 12), no differences were found among the demographic groups in each variable.

Limitations

There were several limitations to this study. First, the data was collected in the implementation phase of the MHRM in the DeKalb CSB population. As with any new implementation, there is a possibility of encountering errors in the early stages. This is especially true in a large study population, like DeKalb CSB. A second limitation was that although a schedule for administering the assessments was established, a large number of consumers were not compliant to the schedule.

New Research Questions Generated by This Study

Two research questions were generated from this study: (1) Is the time interval between MHRM assessments related to the score results for DeKalb CSB consumers? and (2) Is there a way to measure a successful recovery for the DeKalb CSB population?.

Recommendations

At this point the only recommendation to DeKalb CSB is to study the current practice of MHRM administration and to determine why there is currently such a great variation in the time duration between assessments. I also recommend two follow-up studies:

(1) An analysis of the influence of time intervals of assessments and score outcomes. All of the subjects in this study must be a DeKalb CSB consumer for at least six months before taking the initial assessment. This is done to remove new consumers, who are still experiencing a great number of services. Given that the MHRM was given to all consumers (new and existing), the data for this analysis has already been collected.

(2) Developing a benchmark for a successful recovery would involve the application of psychometric principles. Furthermore, a successful recovery, as defined by MHRM, may not translate into a successful recovery life experience.

DeKalb CSB serves as a leader in the recovery movement among all Georgia CSBs (Community Service Boards). It would be beneficial if they could lend their expertise to other CSBs in some way. Although the final recommendation exceeds the scope of this work, it is important to furthering the recovery agenda. The recommendation is that funds be sought to

perform a large trial of recovery measures in a set of diverse populations throughout the United States. The goal of the trial would be to identify challenges in administering the recovery measures and to apply advanced psychometric analysis to the score data. Given that the 2003 Presidential Freedom (DHHS, 2003) report has placed a high priority on the recovery movement, it only makes sense that substantial funds be provided to advance this agenda.

Conclusion

Over the past 20 years many new generations of psychotropic drugs have revolutionized the care of the mentally ill patients. But improvements in psychopharmacology alone are insufficient for improving the quality of life for the mentally ill. Service delivery, utilization, and empowerment are also key elements. The recovery model provides a way for patients to be empowered, set goals, and define their own recovery. Perhaps the missing piece of the puzzle in advancing the recovery model is a strong set of empirical data.

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