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Measuring the Effect of Supported Employment Treatment on Self-Efficacy in Individuals with Severe Mental Illness

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MEASURING THE EFFECT OF SUPPORTED EMPLOYMENT TREATMENT
ON SELF-EFFICACY IN INDIVIDUALS WITH SEVERE MENTAL ILLNESS

A Dissertation

Presented to the Faculty of Antioch University Seattle

Seattle, WA

In Partial Fulfillment of the Requirements of the Degree of Doctor of Psychology

By
Meghan Szczebak

February, 2012

MEASURING THE EFFECT OF SUPPORTED EMPLOYMENT
TREATMENT ON SELF-EFFICACY IN INDIVIDUALS WITH SEVERE
MENTAL ILLNESS

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DOCTOR OF PSYCHOLOGY

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ABSTRACT

MEASURING THE EFFECT OF SUPPORTED EMPLOYMENT TREATMENT ON SELF-EFFICACY FOR INDIVIDUALS WITH SEVERE MENTAL ILLNESS

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Competitive employment is a common goal for those with severe mental illness (SMI), and evidence shows that the majority of those with SMI want to work. However, despite the desire to work competitively, those with SMI have the highest unemployment rate of any disability group (Mueser, Salyers, & Mueser, 2001). The Recovery Model is an approach to Supported Employment that has provided hope for those with mental illness, as well as challenged treatment providers to adopt a more collaborative, optimistic approach to helping clients live fulfilling, self-directed lives.

To increase employment for those with SMI, effective vocational rehabilitation methods must be investigated and implemented. Only a few demographic and clinical factors correlate with future vocational outcomes, including work history, participation in an individual placement, and support vocational rehabilitation models such as Supported Employment, and self-efficacy. Despite decades of research demonstrating the advantages of Supported Employment model over traditional methods (Burns et al., 2007) the mechanisms for this success

are not fully understood. In particular, any interaction between Supported Employment and self-efficacy needs to be more fully examined.

This study utilized the Work-Related Self-Efficacy Scale (WSES), a psychometric tool designed specifically for the SMI population (Waghorn, Chant, & King, 2005), to investigate a possible effect of Supported Employment on self-efficacy. A treatment group of 39 participants in a Supported Employment program completed the WSES before entering the program, and after completing various stages of vocational treatment. Treatment consisted of a 10-week psycho-educational class, volunteer work and individual vocational counseling. Clients who obtained employment received 30 days of post-employment support, including benefits counseling and peer support meetings. A control group (n=19), were given the WSES at 30-day intervals. Repeated-measures analysis of variance (ANOVA) was used to analyze the data set. Results indicated that the supported employment program participants experienced an increase in work-related self-efficacy as compared to those individuals in the control group. This study adds meaningful information to the growing research on vocational self-efficacy for persons with SMI. In addition, it supports the WSES as a method of feedback to the service-delivery system and related clinical vocational programs to target and improve treatment in order to maximize scarce vocational resources and increase vocational outcomes.

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Table of Contents

Page

Acknowledgements.....	iv
List of Tables	vi
List of Figures	vii
I. Background.....	1
II. Methodology.....	37
III. Analysis and Results.....	44
IV. Discussion.....	54
References.....	67

List of Tables

Page

1. Demographic Characteristics of Sample.....	38
2. Treatment Subjects Available for Analysis Across the Various Phases of Treatment.....	46
3. Control Subjects Available for Analysis Across the Various Phases of Treatment.....	46
4. Tests of Between-Subjects Effects.....	48
5. Repeated Measures ANOVA tests of Within Subjects Contrasts.....	49
6. Comparison of Full Sample Last WSES Measurement Scores for Unemployed Subjects to Last WSES Measurement Scores of Employed Subjects.....	50
7. Comparison of Treatment Group Last WSES Measurement Scores for Unemployed Subjects and Employed Subjects.....	51
8. Comparison of Full Sample Last Measurement WSES Scores for Unemployed Subjects to Last Measurement WSES Scores of Employed Subjects, Excluding Post-Employment Scores.....	52
9. Comparison of Treatment Group Last Measurement WSES Scores for Unemployed Subject to Last Measurement WSES Scores of Employed Subjects, Excluding Post-Employment Scores.	53

List of Figures

Page

1. Theoretical Model.....	2
2. Markovitz’s Labeling Theory Model.....	10
3. Schematic Representation of Bandura’s Theory of Perceived Self- Efficacy.....	26
4. Within-Subject WSES Score Changes from First to Last Measurement	49

Chapter I: Background

This section discusses the key research and theoretical underpinnings in the context of the current study. Specific areas addressed are the recovery model, Supported Employment and self-efficacy. There is increasing recognition of the importance of vocational rehabilitation for helping persons with severe mental illness (SMI) find and keep employment. Decades of research on vocational rehabilitation programming has repeatedly found Supported Employment, a model of evidenced based practices that includes competitive, integrated work environments, rapid job search and ongoing post-employment supports, to offer the best employment outcomes for this population (Campbell, Bond, & Drake, 2009). Aside from access to, and participation in Supported Employment treatment, few personal or clinical variables have been found to correlate with future vocational success (Michon, van Weeghel, Kroon, & Schene, 2005). The variables found to be correlated with later vocational success include work history, history of hospitalizations, and self-efficacy (Michon et al., 2005). Historical (e.g., work history) or clinical factors (e.g., history of past hospitalizations), are static, and offer no opportunities for treatment. Self-efficacy, however, has been shown in previous research to be impacted by observational learning, mastery experiences, and social persuasion (Bandura, 1977).

The purpose of the present research was to obtain a better understanding of the relationships among Supported Employment, self-efficacy, and employment outcomes for individuals with SMI. This study intended to explore how the Supported Employment program model enhances self-efficacy amongst the SMI population. It also further

examined the relationship between self-efficacy and the likelihood of successfully attaining employment. The theoretical model is depicted below in Figure 1.

Figure 1.

Theoretical Model

Supported Employment Program → Career self-efficacy → Likelihood of finding employment

Examining the influence of common Supported Employment treatment on work-related self-efficacy is important because it will provide insight into clinical practices that positively impact clients' beliefs in their ability to work, a factor that has been shown to enhance successful employment outcomes (Regenold, Sherman, & Fenzel, 1999).

Literature Review

The following literature review offers an overview of seminal and current research on three aspects of mental health treatment: 1. recovery model, 2. Supported Employment, and 3. self-efficacy as they relate to the theoretical model of this study. The following section will briefly outline the history, key studies and recent developments in each area. The recovery model is a social movement influencing the mental health system that has been backed by extensive and decades-long research. The recovery model emphasizes client empowerment and participation, collaboration, the value of work, and optimism about long-term outcomes. Employment is an important component of the recovery model, with numerous studies finding improved non-vocational outcomes associated with working (Bond et al., 2001; Jackson, Kellend, Cosco, McNeil, & Reddon, 2009). The Supported Employment (SE) model, which

emphasizes client choice and individualized support, has been shown to be more effective than other employment models in producing employment outcomes for those with chronic and persistent mental illness (Becker et al., 2001; Ridgeway & Rapp, 1999). The literature review briefly outlines supported employment primary practices, the evidence supporting them and emerging practices and theories. Self-efficacy social cognitive theory is one of the most widely utilized and researched concepts in contemporary psychological studies. This section offers a synopsis of the theory and its application to vocational rehabilitation for persons with SMI.

The Recovery Model. The history of treatment of mental illness is rife with notorious examples of pseudoscientific, paternalistic and even abusive treatment. Psychiatry and psychology are young fields, and have seen enormous changes and growth as technology, pharmacology, and evidence-based practices have developed. Schizophrenia in particular has been a diagnosis that has received some of the most bizarre treatments and the most pessimistic prognoses. Long-term or even permanent custodial care coupled with ineffective and abusive treatments, such as insulin shock, lobotomy, and excessive restraints were considered acceptable treatments in the US and Europe well into the 20th century. Hope for recovery was hard to come by, from both patients and treatment providers (Whittaker, 2002).

Historical context. In 1902, Emil Kraepelin, an early and enormously influential psychiatric researcher, characterized the disorder now known as schizophrenia as *dementia praecox*, or early dementia. In his published articles and books, he described schizophrenia as a progressively degenerative illness leading to increased impairment in all life domains and requiring lifelong custodial care (Calabrese & Corrigan, 2005).

Kraepelin's view of schizophrenia as a process of hopeless and progressive deterioration has influenced clinical and diagnostic training and treatment for over a century. Even the APA's *Diagnostic and Statistical Manuals* (DSM), have described schizophrenia's path as consistently debilitating in each of their four editions (Calabrese & Corrigan, 2005).

With this pessimistic view of schizophrenia so widely disseminated and unquestioned, it is little wonder that many clinicians as well as patients view this disorder as a catastrophic and an untreatable life sentence. With little hope for recovery, clinicians may feel that resources are wasted on these patients and patients themselves may find few incentives to make strides towards improving their lives (Lieberman, Kopelowicz, Ventura, & Gutkind, 2002). In their exploration of long-term follow up studies on schizophrenia, Calabrese and Corrigan (2005) noted that clinicians and providers who see little hope for meaningful recovery may be reluctant to expend already scarce resources on what they see as a lost cause. Patients, given this message by clinicians either explicitly or implicitly may see little incentive to expend efforts towards their own recovery, resulting in a cycle of self-fulfilling prophesy.

Recent history. In the past 30 years, several large-scale longitudinal studies have produced evidence that challenges this outlook and points to a more heterogeneous recovery outcome of schizophrenia and other serious mental illnesses. Some of the earliest and most surprising of these studies were conducted by the World Health Organization (WHO) in the International Pilot Studies of Schizophrenia (WHO, 1973). These studies examined the course of illness of those diagnosed with schizophrenia and other serious mental illness in fourteen diverse cultures, totaling 1,633 participants, across periods of 15-23 years. These and several even larger and more recent studies

found that prognostic outcomes were actually better for individuals with schizophrenia living in developing countries than those living in developed countries (Isaac, Chand, & Murthy, 2007; Jablansky et al., 1992; Sartorius, Gulbinat, Harrison, Laska, & Siegal, 1996). In addition, roughly 60% of those reached at follow up met the criteria for “recovered” as based on a scale of symptom and life domains. Interpretations of these findings point to a need to better understand the role of socio-cultural contexts in recovery from serious mental illness, as well as present a challenge to the belief of schizophrenia as a homogenously progressive and universally debilitating disorder.

Spurred by such studies as well as pharmacological advances, legislation, and research, the mental health system has experienced enormous changes in the past 50 years. Consumer, family, and public objections to a custodial mental health system and advances in pharmacology led to the development of the 1957 Joint Commission on Mental Illness and Health. After extensive examination of the existing mental health system in the US, the commission recommended a deinstitutionalized system and a systemic focus on community rather than custodial mental health (Whittaker, 2002).

Key studies. Following this enormous shift in treatment philosophy, longitudinal studies following patients post hospitalization produced remarkable data supporting recovery for a large percentage of those with serious mental illness. In 10 long-term longitudinal studies of persons diagnosed with schizophrenia while hospitalized, each supported a finding of improvement in psychosocial functioning for a large percentage of participants, with a significant number of individuals experiencing little or no symptoms at follow-up (Desisto, Harding, McCormick, Ashikaga, & Brooks, 1995). The Vermont Longitudinal Research Project, one of the most comprehensive and rigorous of these

studies, followed the progress of 269 individuals hospitalized due to schizophrenia for an average of 32 years (Harding, Zubin, & Strauss, 1987). At follow up, 68% did not display symptoms of schizophrenia, and 45% displayed no symptoms of psychiatric illness at all. Roughly one-third of the population continued to experience significant symptoms. These startling findings have been corroborated by numerous other studies which find that an average of two-thirds of those with schizophrenia will improve or experience remission in the course of their illness (Calabrese & Corrigan, 2005).

The implications of these studies present a clear challenge to the standard view of schizophrenia and major mental illness as a disability life sentence and indicate that recovery is a possibility for many. Challenges and critiques have arisen around exactly how to define recovery. The traditional medical model generally defines recovery as an absence of symptoms, as well as an absence of pharmacological treatment. Research focusing on the experiences of persons with mental illness has led to a definition of recovery that focuses on “controlling symptoms, regaining a positive sense of self, managing stigma and discrimination, and trying to lead a productive and satisfying life” (Markovitz, 2005, p.66). Using a sociological rather than medical model, this perspective encourages a view of mental illness recovery as existing along a continuum rather than as an absolute. From the work of numerous studies examining consumer-defined elements of recovery, several themes emerged that structured the concept of a continuum of improvement. These themes included a focus on the management of symptoms, and the development of self-concept, social, and economic well-being (Calabrese & Corrigan, 2005).

Another theme directly challenging the legacy of Emil Kraepelin is the existence of evidence indicating that recovery is a naturally occurring phenomenon. This has been demonstrated by numerous longitudinal studies examining the course of mental illness in developing countries where patients do not have access to pharmacological or formal mental health treatments (Sartorius et al., 1996; WHO, 1973). The WHO studies following the remission course of individuals with schizophrenia found significantly higher proportions of patients in poor and rural areas of India, Colombia, and Nigeria had better outcomes on established recovery criteria than patients in the developed countries. These results existed despite the fact that most of the patients in the developing countries had little, if any, access to pharmacological maintenance treatment.

Backed by further studies comparing rates of recovery in states providing extensive vs. minimal treatment services, another concept emerges: Psychosocial treatment affects recovery outcomes for persons diagnosed with serious mental illness (DeSisto et al., 1995). In a large-scale matched sample design study, patients participating in a model psychiatric rehabilitation program were compared to Maine patients receiving only traditional medication management care. The findings indicated that those who received psychiatric rehabilitation services were more productive, had fewer symptoms, were more integrated into their local community and had an overall improvement in global functioning (DeSisto et al., 1995). Conclusions of this study as well as the WHO research indicate that a century of discouraging assumptions about the course of serious mental illness need to be re-examined. Mental health can be improved by treatment and hope for meaningful recovery does exist (Calabrese & Corrigan, 2005; Markowitz, 2005).

A recovery-based view of serious mental illness leads to one looming question in particular: What factors facilitate meaningful recovery? Certainly, pharmacological developments in the past fifty years have made enormous contributions to the reduction of symptoms and enabled thousands to lead more fulfilling lives. But studies, such as the Maine-Vermont three-decade study of serious mental illness demonstrate that psychosocial treatments, such as supported housing, supported employment, and effective case management, do improve recovery rates (DeSisto et al., 1995). Consumers themselves repeatedly point to the importance of economic, interpersonal, and social factors in their own recovery.

There appears to be no single answer to the question of developing and implementing the most effective treatments of serious mental illness. A multidisciplinary and integrated systems approach is needed that addresses the interactions, dynamics, and complexities of the recovery process (Markovitz, 2005).

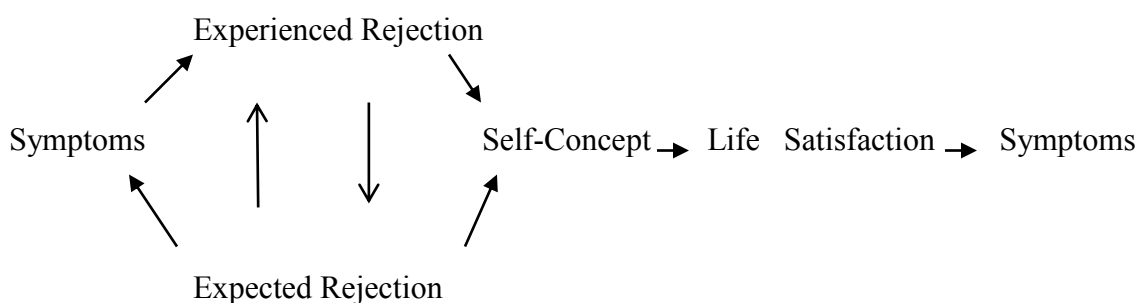
Best practices in recovery. Multiple studies indicate a dynamic relationship among self-concept, symptoms, and economic and interpersonal circumstances (Markowitz, 2005). Rather than seeing the disability as the “broken” part of an individual, disability can be conceptualized as an interaction between one’s skills, abilities, strengths and limitations, and features or expectations of the cultural and social environment in which that person lives (Hahn, 1999). In this model, the disability does not exist solely within the person; it exists, and is constructed by the interface between those personal characteristics and that person’s environment. Recovery-based treatment, therefore, addresses not only symptoms, but also personal characteristics in the individual (such as hope), values the personal choices made by that individual (such as whether or

not to work, go to school, live independently) and provides real opportunities to help the client achieve these goals (such as finding a job, setting up accommodations). In many cases, such as with employment, material, social, or environmental gains associated with these goals lower the risk of developing or increasing mental health symptoms. The process is not one-directional, and needs to be viewed ecologically.

Motivational theory also offers insight into recovery, and recovery practices. Research indicates that individuals with increased self-efficacy, an aspect of motivational theory, take a more active, engaged and directive role in their own treatment, resulting in the achievement of protective factors such as economic success and interpersonal ties (Gecas, 1989). Self-efficacy is developed through challenging, positive “real-world” experiences, encouragement, and role modeling (Bandura, 1977); these are practices that are supported by the Recovery model (Anthony, Cohen, Farkas, & Gagne, 2002).

Other studies indicate a reduction in symptoms directly related to a decrease of external stressors--such as poverty, poor living conditions, and social isolation--that occur when jobs are held and social ties are established. Conversely, self-concept issues, such as the negative impact of stigma or labeling as “mentally ill,” can impact choices, pushing people away from “normal activities” and leading to yet another self-fulfilling prophesy of isolation, depression and increased symptoms. This dynamic is illustrated by sociologist Fred Markovitz’s Labeling Theory Model **to follow** (Markovitz, 2003).

Figure 2.

Markovitz's Labeling Theory Model

This effect also appears to work in reverse. Participation in meaningful activities, such as work, education, or socialization, may lead to increased life satisfaction, which in turn leads to decreased symptoms (Markovitz, 2001). Social Psychology research, such as Markovitz's (1998, 2001, 2003) studies on the effects of stigma and self-concept on persons with mental illness, helps explain the remarkable results of the WHO studies. Those studies found that recovery rates from serious mental illness were actually higher in developing countries than they were in wealthy, industrialized nations such as the US or UK (Jablansky et al., 1992; WHO, 1973). Some explanations offered by ensuing studies have indicated possible benefits of extended familial groups in supporting customized jobs for persons with mental illness (Lin & Kleinman, 1988) that exist in less industrialized societies. Other possible causes are social role explanations and stigmatizing perceptions of mental illness and persons with mental illness (Choler & Ferrono, 1987).

Despite disagreements about the effects of socio-cultural context on mental illness, enormous evidence points to a strong and important link between social environment and mental health. Research that empirically demonstrates the clinical

importance of treating the “whole person” by addressing life-satisfaction, self-concept, and community roles is important in combating a reluctance to give such interventions the academic, economic, and clinical importance they deserve.

In the United States, one of the most influential projects focusing on development, implementation, and education on such recognized community treatments has been the Substance Abuse and Mental Health Services Administration (SAMHSA). Drawing on research from across the treatment spectrum, including sociology, psychiatry, psychology, and epidemiology, this organization collaborated with researchers, clinicians, and treatment providers to develop five areas of treatment that are most clearly and thoroughly supported by existing evidence. These treatments are as follows: Illness Management and Recovery, Assertive Community Treatment, Family Psycho Education, Co-Occurring Disorders, and Supported Employment. SAMHSA’s support for standardizing and disseminating these and other, emerging evidence-based practices is expected to create better outcomes for those living with chronic and persistent mental illness.

Employment. Because the process of recovery for persons living with chronic and persistent mental illness is generally non-linear and multidimensional, it is important to view each segment of treatment as a piece of a dynamic progression, rather than in isolation. Therefore, the ensuing description of the role of employment should be considered as a piece of the recovery process, providing a component that impacts spheres of recovery beyond the obvious economic advantages of working. If one were to condense the evidence on recovery and employment, it might look like this: People with mental illness can work (Bond, 2004), want to work (McQuilken et al., 2003; Mueser,

Salyers, & Muesar, 2001) and if recovery is a goal, should work (Alverson, Becker, & Drake, 1995; Blank & Hayward, 2009).

Although employment programs aimed at assisting those with chronic and persistent mental illness have existed for some time, many of them include programming based on the Developmental Disability (DD) model. These services generally relied on sheltered workshops which are work enclaves that only employ disabled workers and generally pay sub-minimum wages. The jobs often entailed piece-meal, simple assembly, laundry, or other low skill, repetitive work.

While sheltered employment services may have served as an opportunity for some clients to engage in more meaningful or structured activities, they do not offer the community setting nor the opportunity to move past a central identity as a mental health patient, two factors that are seen by researchers to be central to the recovery process (Alverson et al., 1995). It is not surprising that the majority of clients say that they prefer competitive employment to sheltered or enclave employment settings (Rogers, Anthony, Toole, & Brown, 1991). Of the many vocational models only Supported Employment, and to a lesser degree, Fountain House clubhouse models, have been extensively studied (Bond, 2004). These studies include samples from the US (Cook et al., 2008) as well as international studies (Burns et al., 2007).

Supported Employment

Despite the many barriers that impact individuals with SMI, there are some vocational treatments that appear to have significant impacts on employment rates. The most effective of these treatments is the Supported Employment model. Supported Employment emerged from the developmental disabilities field in the early 1980's

(Wehman & Moon 1988) and was later adopted by vocational providers working with clients with SMI. Rather than the traditional “train and place” model, supported employment minimized classroom preparation and focused on providing supports to clients in work settings. The model was applied to psychiatric disabilities, and throughout the 1990’s, numerous publications on its practices and effectiveness emerged, particularly, from research conducted at the Center for Psychiatric Rehabilitation of Boston University and the Dartmouth Psychiatric Research Center at Dartmouth University (Anthony et al., 1999; Becker & Drake, 1994; Bond, Drake, Meusar, & Becker, 1997; Drake & Becker, 1996; Drake, Becker, Biesanz, Wyzik, & Torry, 1996; Drake, HcHugo, Becker, Anthony, & Clark, 1996; Rogers, MacDonald, Danley, Martin, & Anthony, 1997). Throughout the late 1990’s through mid-2000’s, Supported Employment best practices were investigated and measured using a standardized fidelity scale. Essential features of Supported Employment include client choice, almost immediate entry into employment or pseudo-employment situations, and long-term ongoing supports for clients after they are employed.

Supported Employment research. Many large-scale and systematic studies have been conducted, including four randomized controlled studies comparing Supporting Employment, also known as Individual Placement Services (IPS) to traditional vocational services (Bond, 2004; Bond, Xie, & Drake, 2007; Burns et al., 2007; Killackey, Jackson, & McGorry, 2008). From these studies, Supported Employment has emerged not only as the most effective vocational rehabilitation practice for individuals with serious mental illness (Campbell et al., 2009) but also as a well-defined practice, identified by several important defining characteristics. These key principles have been isolated by several

individual studies, but clarified and organized most comprehensively by researchers Gary Bond, Deborah Becker and Robert Drake, with recent evidence indicating that higher fidelity to these principles resulted in higher employment rates for participating clients (Catty et al., 2008). The following descriptions, based on the work of these researchers, outlines both the identifying principles and some of the supporting evidence for them:

1. *Competitive employment.* Strong evidence exists to support the view that working in integrated settings (disabled persons working with those without disabilities) is better for recovery. One study supporting this finding compared clients employed in long-term jobs in their communities with consumers employed in sheltered workshops. The findings indicated improved non-vocational outcomes, such as improved self-esteem, better symptom control, and reported improved quality of life (Bond et al., 2001).

2. *Open eligibility.* Many supported employment studies have attempted, with little success, to isolate client factors that predict success in employment, such as symptomology, diagnosis, age, gender, and prior hospitalizations (Bond et al., 2001; Campbell, Bond, Drake, McHugo, & Xie, 2010). These findings indicate that supported employment services need to be available to all clients, even those who may not be seen as “work ready” by case managers or other treatment providers.

3. *Rapid job search.* Evidence indicates that long training prior to assistance with job placement are detrimental to competitive employment outcomes (Becker et al., 2001; Bond, Dietzen, McGrew, & Miller 1996).

4. *Integrated services.* Integration of vocational rehabilitation services and mental health treatment is essential. In his meta-analysis of research addressing this supported employment principle, Bond (2004) reported evidence supporting the

effectiveness of having mental health services integrated with employment services. Results of more recent research indicate that integration of services within mental health centers improves supported employment outcomes through a process of increased communication between vocational staff and treatment providers, an increase in support, and encouragement to attempt work from treatment staff to clients (Drake, Becker, & Bond, 2003; Killackey & Waghorn, 2008).

5. *Client choice.* Client preferences are important. Bond (2004) found longer job tenure for clients who were assisted with finding jobs matching their expressed career paths. Client choice has also been found to be reported as a recovery principle by clients participating in qualitative research on recovery (Anthony, 1993).

6. *Follow-along supports.* Bond (2004) found “weak evidence” in the two studies reviewed for this principle of long-term follow-along employment supports for employed consumers. However, other evidence suggests that benefits counseling, as part of post-employment support services may be an important component to help clients maintain employment (Tremblay, Smith, Xie, & Drake, 2004).

7. *Benefits counseling.* Research indicated that knowledgeable counseling on the effects of earning income on social security and other public benefits is associated with higher employment rates for Supported Employment Participants (Bond, 2004). It was also found to be associated with increased earnings (Tremblay et al., 2004) and increased employment rates (Bond et al., 2007). In his 2004 meta-analysis, Gary Bond reviewed a decade in Supported Employment research. The analysis focused on the effectiveness of Supported Employment as compared to traditional vocational models, as well as studies addressing best practices in Supported Employment.

Comprising Bond's (2004) meta-analysis were 13 outcome studies comparing Supported Employment to other types of vocational rehabilitation. Studies included in his analysis had utilized recognized standards of fidelity to the Supported Employment model (Bond et al., 2001). These included natural experiments, which compared vocational outcomes from traditional vocational programs that had converted to Supported Employment (Bailey, Ricketts, Becker, Xie, & Drake, 1998; Becker et al., 2001; Drake et al., 1994; Drake, Becker, Biesanz, Wyzik, & Torrey, 1996; Gold & Maronne, 1998). In his review of five studies that had examined the effectiveness of converting traditional day treatment vocational programs to Supported Employment models (Bailey et al., 1998; Becker et al., 2001; Drake et al., 1994; Drake et al., 1996; Maronne, Gandolfo, Gold, & Hoff, 1998), Bond (2004) found the Supported Employment programs averaged a 300% increase in employment rates after conversion from day treatment to Supported Employment. In addition to the day treatment conversion studies, Bond also examined the results of nine experimental studies, which had compared outcomes for clients randomly assigned to either newly established supported employment programs or to traditional vocational rehabilitation models (Bond, 1994; Chandler, Meisel, Hu, McGowan & Madison, 1997; Drake et al., 1999; Drake et al., 1996; Gervey & Bedell, 1994; Gold et al., 2004; Lehman et al., 2002; McFarlane et al., 2000; Meusar et al., 2004). These studies were geographically diverse, representing both rural and urban settings, and utilized the Supported Employment fidelity scale (Bond, Becker, Drake, & Volger, 1997) to ensure uniformity of Supported Employment treatment. Bond synthesized the results of these randomized controlled studies, showing an average of 56% employment rate for Supported Employment

participants, compared to a 19% employment rate for traditional vocational service utilizers. Interestingly, there was no advantage in job tenure for Supported Employment participants.

In addition to these findings supporting the efficacy of the Supported Employment model, Bond (2004) also examined the individual practices that are considered essential to the Supported Employment model. These studies tended to lack the cogency and rigor that had characterized the conversion studies. Bond acknowledges that individual Supported Employment practices have rarely been studied in isolation, or using experimental design. The evidence, therefore, for “evidence based practices” such as rapid job placement, focus on client choice, and integrated services is generally indirect. Of the numerous studies cited in Bond’s analysis, much of the evidence for these practices was based on qualitative studies outlining “expert opinions” on the subject, and correlational studies finding better employment rates for programs adhering to recommended “best” practices (Becker, Smith, Tanzman, Drake, & Tremblay, 2001; McGrew & Griss, 2005). Though Bond outlined seven “best practices,” the strength of support for these practices was mixed. In addition to rather weak methodologies, a coherent analysis of best practices is limited by inconsistencies in programming, definitions, and unstandardized measurements.

Since this study’s publication in 2004, others have built on evidence supporting Supported Employment as an effective practice (Cook et al., 2005; Cook et al., 2008) as well as expanded the research into best practices (Bond, McHugo, Becker, Rapp, & Whitley, 2008). Although generally consistent with his basic findings that Supported Employment models are more effective than traditional models and that Supported

Employment models that adhere to evidence based practices outperform those with less fidelity to the model, (Waghorn, Llyod, & Clune, 2009), some important innovations have emerged, and continue to emerge, as the area of study continues to evolve.

Cognitive remediation training. Although it is not yet widely accepted as a primary component of Supported Employment, there is increasing evidence supporting cognitive remediation training as an important addition to the Supported Employment Model (McGurk, Mueser, DeRosa, & Wolfe, 2009) as well as a promising emerging practice in mental health treatment (Wykes, Huddy, Cellard, McGurk, & Czobor, 2011).

Cognitive remediation training addresses deficits in short term memory, complex reasoning skills, and verbal expression often associated with SMI, particularly in thought disorders such as schizophrenia. Cognitive remediation attempts to address these problems with practical, real-life methods including drills and practice exercises, and the development of appropriate compensatory strategies (McGurk, Twamly, Sitzer, McHugo, & Mueser, 2007). Recent research indicated that cognitive training in conjunction with Supported Employment services may have important vocational and non-vocational benefits for clients (Bond & Drake, 2008; McGurk, Mueser, Feldman, Wolfe, & Pascaris, 2007; McGurk & Wykes, 2008). Two recent studies found significantly higher rates of employment among clients who received cognitive remediation and Supported Employment than those who received Supported Employment alone (McGurk et al., 2007; McGurk & Wykes, 2008). Though still in the development phase, this evidence suggests that cognitive remediation may serve an important role in future Supported Employment practices.

Barriers to Employment and Predictors of Success

Barriers to employment. Research has shown that a majority of clients with SMI want to work (McQuilken et al., 2003; Mueser et al., 2001) and are able to achieve employment with appropriate support services (Becker & Drake, 1994). Positive effects of employment for people with SMI include decreased symptom severity and substance abuse (Bond et al., 2001) as well as increased quality of life, motivation, purpose, and empathy (Byron, Lysaker, & Bell, 2002). Unemployment is detrimental to mental health, even to those without existing mental health diagnoses (Dooley, Prause, & Ham-Rowbottom, 2000). Nevertheless, most people with SMI do not work. Seventy to ninety percent of individuals with SMI are unemployed worldwide (World Health Organization, 2000)

One of the reasons for high levels of unemployment may be related to stigma and discriminatory actions in employment. Disclosing a mental health disability may provoke reactions of pity, or fear in employers. Anger, based on a belief that the client is responsible for his or her condition, is a common response to co-occurring substance abuse conditions (Corrigan, Larson, & Kuwabara, 2007). Additionally, workplace stigma may occur as a consequence of the obvious physical signs of psychotropic medication, such as tardive dyskinesia, akathisia, over-secretion of saliva and tremors associated with taking medication for psychosis (Baldwin & Marcus, 2006). Though evidence of negative views towards mental illness is discouraging, perhaps more so is research suggesting that mental health professionals also perpetuate stigmatizing stereotypes towards those with SMI. Studies show that psychiatric treatment providers often hold the view that those with SMI cannot and should not work (Gowdy, Carlson, & Rapp, 2003; Gowdy, Carlson,

& Rapp, 2004). This is reflected in exclusionary patterns found in clinicians' referrals to vocational services, which favor clients perceived as less disabled and exclude clients with co-occurring disorders (Biegel, Beimers, Stevenson, Ronis, & Boyle, 2009). In addition, evidence suggests that wage losses associated with mental illness are much greater in industrialized nations as compared to developing nations (Levinson et al., 2010) possibly reflecting the impact of stigma as well as differences in economies.

Given the evidence that clients can work, but also that work benefits clients both personally and financially, increasing awareness and education of supported employment research should be an essential goal in the mental health community.

Predictors of employment success. The myth of readiness is a belief described as a treatment provider's conviction that vocational rehabilitation clients must be completely symptom free to participate in competitive employment (Bond et al., 1995). This misconception has been countered by ample evidence, showing that with few exceptions, demographic variables such as diagnosis, symptom severity, age, and gender are poor predictors of employment success (Bond & Drake, 2008; Bond et al., 1996; Dickerson et al., 2007). The clinical variables that have been shown to negatively impact employment rates are cognitive impairment (Dickerson et al., 2007) and poor social skills (Zito, Grieg, Wexler, & Bell, 2007). Only three primary factors have been consistently found to predict finding and retaining employment among severely mentally ill populations: motivation, prior work or educational history and, most importantly access to vocational rehabilitation programming (Becker & Drake, 1994; Bond & Drake, 2008).

Dozens of studies have sought to clarify and isolate predictive factors with mixed results. Most of these studies focused on demographic factors (e.g. age, race, education)

and disability status (e.g., diagnosis, symptoms, hospitalization). Some results have indicated that negative symptoms, such as flat affect, amotivation, and anhedonia influence work outcomes (Bejerholm & Eklund, 2007; McGurk, Muesar, Harvey, LaPuglia, & Marder, 2003; Rosenheck et al., 2006). Other studies, such as McGurk and Wykes's (2008) meta-analysis support these findings, though one recent study found actual work performance in a volunteer job-like setting to be more predictive of work success than the presence of serious negative symptoms (Hoffman, Kupper, Zbninden, & Hirsbrunner, 2003). Cognitive functioning deficits (McGurk et al., 2003; McGurk et al., 2009), deficits in social skills (Zito et al., 2007), and reduced community functioning (Collins, Mowbry, & Bybee, 2000; Hoffman et al., 2002) have also been identified as leading to poorer vocational outcomes. Cognitive factors associated positively with success tended to be specifically limited to areas of executive functioning (McGurk & Meltzer, 2000; McGurk et al., 2003), verbal learning, and memory (Dickerson et al., 2007).

Inconsistencies in results may be due in part to different definitions of variables across studies and various measures of work outcomes (Mowbry & Bybee, 1995). Different populations studied, such as participants in a vocational rehabilitation program, as opposed to a general population of mental health clients, may also contribute to confusion around this issue. Despite limitations of consistent variables and populations in the literature, two attributional factors are most widely accepted as predictive of vocational success: work history and motivation.

Because of the importance of motivation in predicting employment success, several studies have attempted to clarify and isolate specific motivating factors. One

particular study (Anthony, Cohen, & Farkas, 1990) examined the role of motivation using the Need for Change (NFC) scale. This one-page survey, developed as part of the Psychiatric Rehabilitation Readiness Determination Interview by faculty at Boston University's Center for Psychiatric Rehabilitation, was designed specifically to assess rehabilitation interest and need for persons with severe and persistent mental illness.

The Need for Change (NFC) scale has been shown to be predictive of both employment and housing success for this population (Smith, Rio, Hull, & Hedayat-Harris, 1998). Clients who were most unsatisfied with current employment or life situations were more likely to initiate and follow through with life changes, such as finding work, housing, or chemical dependency treatment. Unfortunately, assessing how dissatisfied a client is does not necessarily lead to strategies that would increase satisfaction. While this model offers a useful predictor of a client's intrinsic desire to make positive changes in his or her life, it does not offer insight to program developers or clinicians who are seeking to foster positive changes in clients' behaviors.

Other studies have shown that a token economy can provide reinforcement as clients work toward earning a valued object, activity, or setting (Anthony, 1994; Lecompte, Lieberman, & Wallace, 2000). The treatments were found to be especially effective in reducing aggression and increasing normative community behavior. Despite this research it is not clear if token economies are sufficient to initiate long-lasting behavioral change. Token economy programs addressing employment behavior have not been researched. Work Readiness as defined by the presence of job goals, work skills, and positive work attitudes has also been found to relate to future work performance in this population (Anthony, 1994). Unfortunately, this concept was only briefly explored,

and did not offer any indications of changes in programming or treatment that might facilitate increased work readiness.

A study by Hoffman et al. (2002) found cognitive impairments and fatalistic control beliefs to predict employment success. Fatalistic control beliefs were measured using Likert scales associated with locus of control (internal or external). The authors found that beliefs that events in one's life are determined by external forces impede employment success and made recommendations for rehabilitation programs to address fatalistic control beliefs via cognitive training. A more recent study (Bejerholm & Eklund, 2007) found that internal locus of control was also found to be highly correlated with occupational engagement, with similar recommendations for further study.

Self-Efficacy

Self-efficacy, a concept related to locus of control, has been described as a promising predictor of vocational outcome and has been recommended as a potential area of study for future research on vocational rehabilitation for SMI populations (Anthony, 1994).

The concept of self-efficacy as a motivational theory was developed by Bandura and other researchers beginning in the 1960's and continuing into the present day. Self-efficacy was described by Bandura (1977) as "people's judgments of their capacities to organize and execute courses of action required to attain designated types of performances" (p. 391). Distinct from global scales, such as self-esteem or self-determination, self-efficacy expectations refer to the extent to which individuals believe themselves capable of completing a given task. The concept must reference a specific performance or task to be meaningful and predictive (Bandura, 1977). Self-efficacy has

been shown to offer a broad utility in predicting future performance in many areas of study, including in the areas of career choices and vocational interventions (Betz, 1992; Klein, Wheaton, & Wilson, 1997). Results from these and many other studies indicate that self-efficacy can provide an effective model for understanding and enhancing career search behaviors for diverse populations, including those with disabilities.

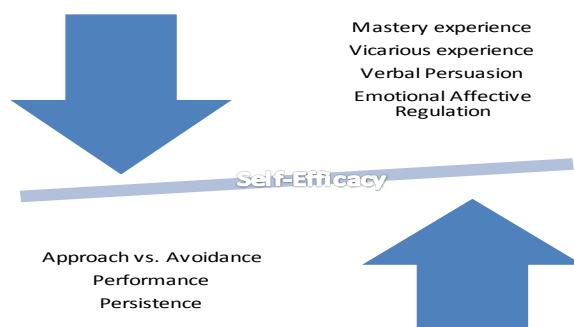
Bandura's self-efficacy model uses a dynamic system of interrelated beliefs, behavioral consequences, and belief sources (see Figure 3). Experiences, both positive and negative, affect self-efficacy beliefs. Self-efficacy beliefs in turn affect actions and coping behaviors, such as initiation or avoidance of challenging tasks and the persistence with which an individual pursues that task despite obstacles or setbacks. By definition, challenging situations will present obstacles of one kind or another that must be overcome through creative use of cognitive problem solving, emotional support, and other coping skills. Increased confidence in one's ability to think of practical solutions, to cope with stress, frustration or despair, and to identify new or existing sources of emotional or social supports will result in engagement in more difficult undertakings in the future. This is typically described as an "approach" response, and higher levels of self-efficacy are associated with increased engagement or initiation of tasks (Schunk, 1990). In contrast, poor self-efficacy, a doubt in one's ability to manage difficult experiences, will result in avoidance of such situations (Bandura, 1977). Avoidance of challenging tasks decreases the opportunity to develop self-efficacy and creates a self-fulfilling cognitive and affective loop, whereby tasks are judged as more difficult than they actually are, and setbacks are attributed not to obstacles but to personal aptitude or

competency. Self-efficacy around this task is thus further reduced with subsequent avoidance of the task (Bandura 1977).

If self-efficacy is commonly defined as the belief in one's capabilities to achieve a goal or an outcome, performance is the behavior that moves an individual towards that goal or outcome. The quality of that performance is influenced by self-efficacy beliefs, and includes specific behaviors such as effort, persistence and planning. The role of persistence has been a particular focus of study, as poor persistence inevitably hinders performance and as lack of persistence is directly related to problems such as academic drop-out rates (Alivernini & Lucidi, 2011). Negative performance experiences, particularly when self-efficacy is unformed, is often attributed by the individual not to poor planning, insufficient effort, or lack of persistence but to personal failing, further reinforcing avoidance and contributing to low self-efficacy. Bandura (1977) described four main sources of these experiences leading to self-efficacy: 1) mastery experience, that is, experiences of successful performance of a given task, 2) vicarious experience or modeling, referring to the experience of observing others strive for and achieve a given task, 3) social persuasion, for example encouragement or positive feedback from a respected other, and 4) affective or physiological regulation, the ability to manage emotional and physiological stress or fear reactions.

Figure 3.

Schematic Representation of Bandura's (1977) Theory of Perceived Self-Efficacy



Mastery experiences are the primary sources of gaining self-efficacy (Bandura, 1995). Successfully reaching a given target goal builds a belief in one's self-efficacy and leads to the initiation of other successively more challenging endeavors. Although the target goal is task specific, self-efficacy does not refer to the learning or mastery of a specific task, technique, or skill. Bandura (1995) notes that mastery experiences build self-efficacy not through being simply taught techniques, skills, or habits, but rather through developing a set of flexible cognitive, behavioral, and emotional regulation skills that are individual to the client and can be adapted to changing circumstances. Vicarious experience, or seeing others succeed in challenging situations through sustained effort, also increases efficacy levels in the observer (Schunk, 1987). The influence of vicarious experience depends on the perceived similarity between the individual and the person observed; the more similar they are the greater the increase in self-efficacy levels and vice versa (Bandura, 1977; Schunk, 1987). Educational and supportive group activities

can be used as a source of vicarious experience to increase self-efficacy (Altmaier, Russell, Kao, Lehmann, & Weinstein, 1993), as can the use of role models (Bandura, 1986; Bandura, 1995; Schunk, 1987). Verbal persuasion is encouraging behavior for others in the form of positive verbal feedback and validation of effort and ability. Affective regulation refers to the ability to manage ones physiological, and emotional states.

Self-efficacy concepts have been widely applied to many areas of study, including educational, health management, and risk-behavior studies as well as vocational and career studies. Its applications to vocational rehabilitation with those with SMI have been limited to a handful of studies, which will be explored later. The scarcity of research does a disservice to those struggling with chronic and persistent mental illness. Severe mental illness such as schizophrenia, bi-polar disorder, and major depressive disorder often deliver a devastating impact in nearly all life-domains. Because of the developmental insult that is caused by the onset of mental illness in the early teens to mid-twenties, many individuals with SMI are denied the formative mastery experiences in all four self-efficacy domains. Mastery experiences are limited by anhedonia, cognitive distortions, and isolation. Both social supports and social persuasion are limited by withdrawal from age-appropriate social contact, and affective regulation is affected by both positive and negative symptomology.

Theoretical Model: Self-Efficacy, SMI, and Employment

Vocational self-efficacy in persons with SMI has been researched in several studies. Lent, Larkin and Brown (1989) found self-efficacy to be predictive of career search behaviors, with low self-efficacy leading to reduced participation in vocational

classes, job search and counseling. A study using the Career Search Efficacy Scale (Solberg et al., 1994) found a significant correlation between self-efficacy and attainments of the employment goal, suggesting that higher levels of career self-efficacy are associated with successful employment outcomes (Regenold, Sherman, & Fenzel, 1999). The 35-item Career Search Efficacy Scale was the first instrument developed specifically to measure self-efficacy and career search skills, assessing job search, interviewing, networking and personal exploration efficacy (Solberg et al., 1994).

Regenold et al. (1999) used the Career Search Efficacy Scale to explore the use of self-efficacy as a predictive factor for clients with SMI who were participating in a Supported Employment program. One hundred and twelve participants in a Supported Employment program were administered the 35-item Career Search Efficacy Scale (Solberg et al., 1994) upon beginning the Supported Employment program. Demographic data, such as age, race, hospitalization history, diagnostic code, as well as symptom checklist and employment history was collected. Participants' employment status was tracked during the 12-month duration of the study. Stepwise regression analysis indicated that only self-efficacy was a significant predictor of attaining employment, with participants with higher degrees of self-efficacy ($p < .04$).

This is an important study because it demonstrates again that demographic variables such as diagnosis are not predictive of future employment success, and supports self-efficacy as a useful predictive variable. One limitation of this study is its failure to provide a clear description of the services and practices of the participating Supported Employment program. Although Supported Employment is defined by a set of evidence-based practices, interpretation of these practices can be somewhat fluid. Another

limitation is the scale's development and validation using an undergraduate sample which reduces the scale's external validity, particularly for a specialized population such as those with SMI. Also, because the study administered the Career-Search Efficacy Scale only once, prior to participating in Supported Employment, the data cannot provide insight into the role that Supported Employment programming may or may not play in the development of career related efficacy for this population.

Self-efficacy interventions. Numerous studies have identified behavioral interventions that can enhance vocational self-efficacy (Bandura, 1995; Betz, 1992). Even minimal vocational training was found to have a positive effect on self-efficacy (Kreishol, Ulvin, Hecox, & Wettersten, 2000). In their experimental study of job seekers at a Veteran's Affairs medical center, Kreishol et al.(2000) utilized the Career Decision-Making Self-Efficacy Scale Short Form (CDMSE-SF) (Betz, Klein, & Taylor, 1996) to test a group of 13 participants before and after a two-part resume development session with a vocational counselor. A group of 22 randomly chosen participants were placed on a resume development waitlist. This group also took the survey prior to entrance to the program and one week later, serving as a matched control group.

Paired samples t-test showed a significant increase in WSES scores from pre-test to post-test for the treatment group ($p < .01$). However, no significant differences were found when the treatment group changes were compared to changes for the control group. Although this study lends some support for the use of targeted interventions to influence self-efficacy, the lack of significant differences between the treatment and control group raises the possibility of alternative mechanisms, such as placebo effect, selection effect and therapist effects. In addition, the small sample size limits the strength of the study.

Research on effective self-efficacy interventions stresses the importance of tailoring the intervention to the desired outcome (Betz, 1992). Bandura's theory (1977) suggests four basic ways to develop self-efficacy, mastery experiences, vicarious experiences, persuasion and altering emotional arousal. Mastery experiences in particular are shown to be the most effective (Bandura, 1995). These experiences are guided by facilitators to provide an effective intervention that can strengthen self-efficacy in a given domain (Bandura, 1995). Bandura (1995) described four major components of guided mastery experiences: 1) factual information, or skills teaching, 2) self-regulatory skills training and experiences, whereby a student can practice mastery over negative emotional or physiological symptoms, 3) providing repeated opportunities to practice skills or target experiences in a supportive environment, and 4) the enlistment and utilization of social supports encouraging the targeted behavior.

Interventions directed at strengthening job skills and job readiness self-efficacy are particularly effective and are an important component of vocational rehabilitation (Strauser, 1995). This evidence is corroborated, although somewhat indirectly, by vocational rehabilitation research that showed poorer outcomes for persons with SMI enrolled in "pre-employment training lesson" based programs was compared to those enrolled in more experiential programs (Drake et al., 1994).

Supported Employment is a federally recognized, vocational- rehabilitation method that is characterized by six primary principles and evidence-based practices (Bond, 2004; Bond & Drake, 2008; Bond, Picone, Mauer, Fishbein, & Stout, 2000).

Summarized, these are:

1. Services focus on competitive employment

2. A non-exclusionary policy towards participants
3. Rapid job search
4. Integration of rehabilitation and mental health services
5. Focus on client choice
6. Continuous long-term support

The Supported Employment Model based on these guidelines has been recognized by the federal government and defined in the Rehabilitation Act Amendments of 1998 as “competitive work in integrated work settings ... consistent with the strengths, resources, priorities, concerns, abilities, capabilities, interests, and informed choice of the individual, for individuals with the most significant disabilities for whom competitive employment has not traditionally occurred” (Rehabilitation Act Amendments, 1998). *The Harborview Mental Health Supported Employment Services Program*. The Harborview Mental Health Supported Employment Services Program is designed to closely adhere to the evidence-based practices described earlier. A 2005 and 2006 independent assessment of the program by the Washington State Council on Supported Employment used the Supported Employment Fidelity Scale (Bond, Becker, Drake, & Volger, 1997) and rated the program at 89 out of 100 points. The 1997 Supported Employment Fidelity Scale is 15-item metric was designed to measure best practices along a four-factor model: job selection, integration with treatment team, job selection and vocational staffing. One critique of this scale is that it used rather broad language in describing best practices. A more recent 25-item version of this scale expands and operationalizes previously undefined factors. An example is “zero exclusion criteria” which is defined in this scale as providing services to interested clients regardless of “job

readiness factors, substance abuse, symptoms, history of violent behavior, cognitive impairments, treatment non-adherence, and personal presentation.” (Becker, Swanson, Bond, & Merrens, 2008, p 44. ?). However, the Harborview Supported Employment program has not yet been assessed using this newer instrument, resulting in some unaddressed questions of program fidelity.

It important to note that while the following phases of treatment are designed to incorporate and fulfill Supported Employment best practices, the phases of treatment are not designed to “line up” or correspond linearly to these practices. Rather, the best practices are implemented into the phases of treatment holistically with each phase designed to address clients’ needs while also holding true to Supported Employment Principles. The typical course of participation in the supported employment program involves an initial meeting and brief intake interview between clients and vocational counselors. The phases of treatment are as follows:

Phase 1.....Psycho-educational class

Phase 2.....Volunteer job

Phase 3.....Individual job placement assistance

Phase 4.....Post-employment support

Phase 1: Following an initial meeting, a client attends a 10-week psycho-educational course called “Choosing Your Next Job..” This class occurs weekly and addresses issues of symptom management, addiction triggers and relapse prevention, job market education, social security work incentives benefit education, time management and competitive workplace expectations. These classes are structured to include peer support and socialization as well as practical, career-educational material. At week six,

each client meets individually with a vocational counselor for one hour to discuss placement either in volunteer work or a job. Those who are undecided are given assignments related to their indecisions, such as investigating questions they may have about a career choice.

The class continues through weeks 6-10 with most participants engaged in some form of volunteer activity. Stress associated with increasing social and career activities is a primary topic addressed in group, with encouragement and support provided from the group and the vocational counselors. The group ends at week ten with a celebration acknowledging the commitment and struggles of the participants. Each participant receives a diploma signed by the vocational counselors and the department manager. This phase of the program is likely to impact client's self-efficacy, particularly around planning and job-securing tasks through direct experiences, such as training exercises and the expectations of attendance, appropriate classroom behavior, and punctuality as well as vicarious experiences and verbal encouragement from staff.

Phase 2: Most clients choose to participate in volunteer work in order to address identified work-readiness barriers. These clients are supported in their vocational rehabilitation through psycho-educational peer-supported volunteer group which meet once a week and provide opportunity for socialization, support and a clinical assessment. The volunteer job is chosen to coincide as closely as possible with the participant's actual job goal. For example, a participant who has a career goal of working in a thrift store may be assisted with finding a volunteer job at a Goodwill thrift store, a real work setting very much like the one clients would experience as a paid employee. Likewise, the vocational counselor will attempt to create a work-like setting in the volunteer job, with a set

schedule, duties that closely resemble those of the participant's chosen profession, and a commitment to keep the volunteer job for at least 90 days. Clients may remain in their volunteer job as long as they wish, though they are encouraged by staff to try to seek paid employment. This phase of the program is expected to increase clients' vocational self-efficacy through the direct experience of participation in a work-like activity as well as attendant supports from staff.

Phase 3: Clients who identify themselves as work ready are encouraged to attend a weekly "Job Club" group aimed at learning vocational skills such as internet job searches, resume building, interview skills, money management, and relapse prevention. This class provides both social peer supports and practical skills training. Affective responses to interviews or other stressful job-search realities are addressed and normalized. Group members are encouraged to share their anxieties or anxiety-coping techniques with their peers. These experiences are expected to result in increases in work-related self-efficacy, as clients build confidence and skills in job-search techniques as well as emotional regulation skills.

Phase 4: Following placement in a job, clients are assisted by clinical staff in benefits planning, symptom management, relapse prevention, interpersonal skills training, and workplace socialization skills. This assistance is provided through both individual sessions with vocational staff and weekly support groups with peers. . ."

Typical progression in this program involves advancement from group to group, with supports gradually lessening in intensity but available to clients on an on-going basis. Clients are expected to demonstrate increased levels of work-related self-efficacy after 30

days of employment plus retention supports. The basis for this expectation is the high degree of real-world mastery experiences that competitive employment provides.

The Effect of Supported Employment on Self-Efficacy

Self-efficacy as a construct offers several important advantages in the investigation and development of effective vocational programming for persons with SMI. First, because the four sources of efficacy information have been clearly outlined and researched, they can be used to develop vocationally specific interventions designed to increase self-efficacy and increase outcomes. Second, self-efficacy's utility as a construct has been widely acknowledged, leading to the development of several reliable vocational-domain self-efficacy measurements which can be used to assess the success of those interventions. Third, when utilizing self-efficacy testing and target-specific interventions, a closer match between intervention and support need can be developed. This could increase targeted mastery experiences and reduce the possibility of negative performance experiences, thereby leading to greater levels of career self-efficacy and employment successes.

Supported Employment has also been extensively researched, with demonstrated effectiveness and an outlined set of evidenced-based practices. The Supported Employment Fidelity Scale is a tool that has been developed and tested to allow for standardization and measurement of consistency in practices between programs. Although Supported Employment experiences potentially provide opportunities for work-related self-efficacy development in persons with SMI, a link between the two has never been examined. To restate, although research shows that Supported Employment is effective in helping persons with SMI find employment (Drake et al., 1996), and research

also shows that self-efficacy is one of the few clinical variables predictive of employment success for those with SMI (Regenold et al., 1999) to date no research has examined the effect of Supported Employment on vocational self-efficacy in the SMI population. The present study will evaluate the effect of Supported Employment on vocational self-efficacy for persons with SMI. Based on previously cited research describing interventions that can enhance vocational self-efficacy (Bandura, 1997; Betz, 1992), it is predicted that participation in supported employment will increase self-efficacy. Based on the research described above suggesting higher rates of work-related self-efficacy are associated with higher rates of employment (Regenold et al., 1999; Kreishol et al., 2000), it is predicted that higher work-related self-efficacy will enhance employment rates.

Chapter II: Methodology

Sample

The sample (N=58) included both a treatment and control group. The treatment group was comprised of thirty-nine study participants drawn from the population of the Supported Employment Program of a large mental health center in downtown Seattle, Washington. Nineteen randomly chosen individuals uninterested in participation in employment services from the same mental health center served as the control group. All study subjects (treatment and control) met the following criteria:

1. All participants had a confirmed diagnosis of schizophrenia, schizoaffective, bi-polar I or II, major depressive disorder or psychotic disorder.
2. All participants were 18 years or older.
3. All participants were able to provide informed consent.
4. All participants were able to sufficiently read and write in English at a 6th grade level.

All subjects were asked for consent in writing to participate in the research study. Subjects who declined participation in the study were allowed to participate fully in the vocational program and were informed of this in writing as well as verbally. Archival data from existing medical records were collected for the following demographic variables: age, diagnosis, gender, race, current or past substance abuse, and criminal record. Demographic characteristics of the treatment and control groups are shown below.

Table 1

Demographic Characteristics of Sample

Variable	Treatment group (n=39)		Control group (n=19)	
	Mean	Range	Mean	Range
Age	45.4	18-65	49.31	26-72
	N	Percentage	N	Percentage
Female	12	30%	4	21%
Male	27	69%	15	78%
African-American	11	28%	7	36%
Asian/Pacific Islander	3	7%	0	0%
Caucasian	23	58%	12	63%
Hispanic/Latino	0	0%	0	0%
Native American	1	2%	0	0%
Other ethnicity	1	2%	0	0%
Diagnosis				
(total exceeds 100% due to comorbidity)				
Psychotic Disorder	8	20%	9	47%
Depressive Disorder	16	41%	6	31%

Personality Disorder	5	12%	2	10%
Bi-Polar Disorders	14	35%	3	15%
Anxiety Disorder	11	28%	6	31%
Cognitive Disorder	2	5%	1	5%
Co-occurring Substance Abuse (total exceeds 100% due to comorbidity)				
Alcohol	14	35%	9	47%
Alcohol abuse in remission	11	28%	1	5%
Alcohol abuse active	4	10%	5	26%
Amphetamine/Cocaine	0	0%	2	10%
Cannabis	2	5%	1	5%
Opioid	1	2%	1	5%
Polysubstance	7	17%	5	26%
Other	0	0%	1	5%
Criminal History				
None	13	34%	3	15%
Non-violent	6	15%	7	36%
Violent	6	15%	2	10%
Multiple Violent (3 or more convictions)	3	7%	1	5%

Based on a chi-square test, the only significant difference between the treatment and control group was the percentage of subjects for whom alcohol abuse was in remission, $\chi^2(1, 56) = 3.970, p = .04$. The treatment group had a significantly higher number of participants with a diagnosis of alcoholism in remission (28%) than did the control group (5%).

Treatment

Treatment was comprised of various phases of participation in the Harborview Mental Health Supported Employment Program. These phases were:

1. Completion of “Choosing Your Next Job” (10 week psycho-education class)
2. Completion of 30 days on a volunteer job
3. Completion of 20 hours of “Job Club” and individual job placement assistance
4. Completion of 30 days of employment and participation in vocational retention group

Dependent Variables

Self-efficacy. Each participant’s progress in the program was tracked for twelve full months beginning with an initial intake with vocational staff and completion of the Work-Related Self-Efficacy Scale (WSES) (Waghorn, Chant, & King, 2005). The 37-item Likert scale was developed based on several existing vocational rehabilitation assessment tools, but with questions designed to address challenges of the SMI populations (Waghorn et al., 2005). The creators of the WSES (Waghorn et al., 2005) referenced aspects of the Career Search Efficacy Scale (CSES) (Solberg et al., 1994) described earlier, including a four-part subscale model. The Work-Related Social Skills conceptual framework (Tsang & Pearson, 1996), the Work Limitations Questionnaire

(Lerner et al., 2001), the Work Behavioral Inventory (Bryson, Bell, Lysaker, & Zito, 1997) and Bandura's (1995) guidelines for developing self-efficacy scales were also sourced by the creators of the WSES (Waghorn et al., 2005). The WSES was scaled using individuals with a confirmed diagnosis of schizophrenia or schizoaffective disorder, between ages 18-64. Items on the scale were loaded according to a factor analysis that indicated four distinct factors:

1. Career planning self-efficacy
2. Job securing skills self-efficacy
3. Work-related social skills self-efficacy
4. General work skills self-efficacy

Items loaded high on career planning self-efficacy included basic abilities such as identifying career choices, or being able to research career options. Job securing questions focused on concrete tasks such as being able to request, dress appropriately for, and participate in an interview. Work-related social-skill items rated confidence in one's ability to complete such tasks as asking for time off, working cooperatively, resolving a conflict with a co-worker, or declining requests to work overtime. General work skills items related to abilities to manage health and symptoms, to work at a steady pace, and follow a routine. Each item was read to the client by an administrator, in a private setting. Per scale instructions, clients were asked questions prefaced with "How confident do you feel in your ability to..." and rated on a ten-point Likert scale with zero being "No confidence" to ten "Total confidence." Average time to administer each test was 15 minutes.

Reliability of the WSES was established by the authors (Waghorn et al., 2005) through a year-long follow up of participants (months 1, 6 and 12) with repeated coefficient alpha analyses. Coefficient alpha for the 37 items remained strong over time (.96, .96, and .96 respectively) (Waghorn et al., 2005). Mean scores for each factor as compared to mean global WSES scores were not significantly different ($p < 0.28$) indicating construct reliability for the test (Waghorn et al., 2005). Additional analysis of the WSES scale testing short-cycle test-retest reliability was conducted in a 2010 study (Harris et al.). Participants with SMI were administered the WSES over the phone on two occasions two to five days apart. This study replicated Waghorn, Chant, & King's (2005) findings of internal consistency and construct validity for the WSES, reporting Cronbach's alpha at 0.98.

The original design of this study called for treatment group participants to be tested using the WSES five separate times, shown below.

1. During the initial intake interview (pre-test)
2. After completing Choosing Your Next Job (Phase 1 treatment)
3. After completing 30 days on a volunteer job (Phase 2 treatment)
4. After receiving 20 hours of "Job Club" and individual job placement assistance (Phase 3 treatment)
5. After 30 days of employment and participation in vocational retention group (Phase 4 treatment)

Data for both treatment and control groups was collected but not examined until the end of the study so as to not bias the researcher. Keeping subjects' scores on the

WSES confidential reduced bias on the part of vocational counselors facilitating treatment and increased internal validity.

Employment was a categorical variable (0 = not employed, 1 = employed) measured after each phase of the Supported Employment Program.

Data Analysis Plan

After the completion of the entire program (12 months), WSES scores were entered into SPSS (PSAW Statistics Data Editor 18) for analysis. Control group scores, which had been collected throughout the same 12-month time frame, but based on 30-day testing intervals to approximate treatment phases, were likewise entered to SPSS (PSAW Statistics Data Editor 18) for analysis. When possible, each hypothesis was tested using inferential statistical procedures. All decisions on the statistical significance of the findings were based on a .05 criterion alpha level using a one-tailed test.

Chapter III: Analysis and Results

The following design was used to test the first stage of the study;

Treatment group: O₀ X₁ O₁ X₂ O₂ X₃ O₃ X₄ O₄

Control group: O₀ O₁ O₂ O₃ O₄

Where the assignment to groups is non-random and:

O₀ = Work-Related Self-Efficacy Scale (pre-test)

X₁ = Choosing Your Next Job (Phase 1)

O₁ = Work-Related Self-Efficacy Scale

X₂ = 30 days of volunteer job (Phase 2)

O₂ = Work-Related Self-Efficacy Scale

X₃ = 20 hours of group or individual job placement assistance (Phase 3)

O₃ = Work-Related Self-Efficacy Scale

X₄ = 30 days of post-employment support (Phase 4)

O₄ = Work-Related Self-Efficacy Scale

While the researcher attempted to administer the WSES after each phase of treatment, staff attrition, client refusal, missed WSES administration (e.g. client missing appointment to take WSES with administrator prior to completion of phase 2) or simultaneous treatment (e.g. client began searching for job with vocational counselor while still in first 30 days of volunteer job) resulted in an incomplete data set. Control group subjects were tested at 30-day intervals, roughly consistent with intervals for the treatment group. Because control subjects did not participate in treatment, there were fewer data collection problems, resulting in a much more complete 5-part testing cycle. Although “gaps” in the test-re-test cycle were problematic, less than one percent of all

data points from the data collected with the WSES instrument were missing (e.g. unanswered questions) and data that were missing appeared to be random based on a visual assessment of the percentage of observations missing for each question.

Mean substitution techniques were used to impute missing values. Although the WSES is comprised of four components: General Job Related Self-Efficacy, Social Skills Self-efficacy, Planning Self-Efficacy, and Job Securing Self-Efficacy, validity of the scale as a composite has also been supported by recent research, previously discussed (Harris et al., 2010). The data from the WSES was therefore analyzed as composite scores across all four subscales. As stated earlier, the original study design called for testing each treatment participant at five intervals. This would have allowed for multiple measures of self-efficacy in the treatment sample, enabling an analysis of intra-subject changes in self-efficacy per each treatment phase completed. Due to staff changes and disruptions in the schedules for psycho-educational and other support groups, there were gaps in the stepwise process, including missed post-treatment surveys and a small sample size across many of the treatment comparisons.

The cell sizes for the treatment observations are shown in Table 2. The diagonal represents the number of total observations for each of the five intervals. The off-diagonals provide information on how many subjects completed the WSES for the various combinations of intervals. For example, while twenty treatment subjects completed a WSES pre-test, and 17 of these subjects completed phase 1, Choosing Your Job, only three of these clients also completed the WSES after the class. Table 3 provides similar data for the control group.

Table 2.

Treatment Subjects Available for Analysis Across the Various Phases of Treatment

	Pre-test	Choosing Your Next Job	Volunteer work	Job placement assistance	Post-employment support
Pre-test	20				
Choosing Your Next Job class	3	7			
Volunteer work	2	2	11		
Job placement assistance	4	1	3	13	
Post-employment support	3	1	2	7	9

Table 3.

Control Subjects Available for Analysis Across the Various Phases of Treatment

	Pre-test	30 days post pre-test	60 days post pre-test	90 days post pre-test	120 days post pre-test
Pre-test	18				
Choosing Your Next Job	12	12			
Volunteer work	11	11	13		
Job placement assistance	9	1	10	10	
Post-employment support	6	1	2	7	7

Due to these problems with sample size, the original study design calling for repeated measurements of intra-subject scores across the full set of phases was modified to a comparison of score changes from pre-test to last available measurement, or from first available measurement to last available measurement. Although this method does not allow for an analysis of changes in WSES specific to individual treatment phases, it does offer an analysis of WSES score changes from subjects' entry to the program to termination of program.

Hypothesis 1

The relationship between Supported Employment program and composite self-efficacy.

Hypothesis 1 proposed that completion of a Supported Employment Program would enhance self-efficacy. As an initial assessment, ANOVA was used to compare pre-test scores of the treatment group to those of the control group, and results indicated no significant difference ($p = 0.16$). This result suggests that WSES scores for treatment and control groups did not differ at pre-test.

To assess whether participation in the Supported Employment Program generally led to enhanced levels of self-efficacy, a 2 (treatment, control) by 2 (first measure, last measure) repeated measures ANOVA was used to compare within-subject self-efficacy changes between the treatment group ($n = 17$) and the control group ($n=14$). To be included, participants did not necessarily need to take the pretest. Each subject simply needed to provide at least two WSES scores, the first and the last measurements. Therefore this analysis includes treatment group subjects caught mid-stream in their treatment, as well as those who received every phase of treatment.

In order to control for the variety of gaps in the repeated measurements of the

WSES, a variable “gap” was created that reflected the number of treatment phases between the first and last measurement. To illustrate, if the subject was measured during the pre-test (e.g. first measurement) and the last measurement was after the second phase of treatment, the gap was one. If the subject was first measured at pre-test (i.e., first measurement) and the final measurement was after the third phase, the gap was two. Controlling for the gaps in treatment removes any effect of the variable intervals in the assessment of WSES differences across subjects.

The 2 (treatment, control) x 2 (first measure, last measure) ANOVA model was used to analyze variation in the distribution of scores between treatment and control groups. As shown in Table 4, the between-subject main effect of group (i.e., treatment vs. control) was not significant, $F(1, 28) = 2.57, p = 0.12$. This result suggests that there is no significant difference between the pooled self-efficacy measurements (first and last) across those that received the treatment and those that did not.

Table 4.

Tests of Between-Subjects Effects

Source	Type III Sum of Squares	Df	Mean Square	F	Sig. (one-tailed)
Intercept	490404.57	1	490404.57	42.30	.00
Gap	209.36	1	209.36	.01	.89
Group (Treatment vs. Control)	29855.49	1	29855.49	2.57	.12
Error	324547.70	28	11590.98		

As shown in Table 5, the within-subject main effect of measurement (first vs. last) was also not significant, $F(1, 28) = .402, p = 0.28$. This result suggests that across the entire sample of subjects, self-efficacy scores did not significantly differ between the

first measurement and the last measurement. However the within-subject interaction between group (treatment vs. control) and measurement (first vs. last) was significant, $F(1, 28) = 5.46, p = 0.01$, shown below in Table 5.

Table 5.

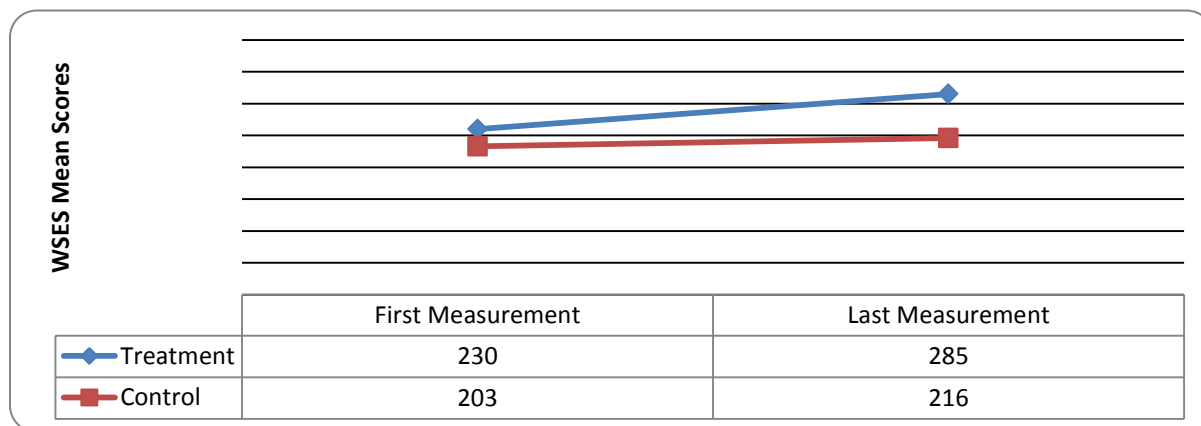
Repeated Measures ANOVA Tests of Within Subjects Contrasts.

Source	Type III Sum of Squares	Df	Mean Square	F	Sig. (one-tailed)
Measurement (first vs. last)	418.047	1	418.04	.40	.28
Measurement * gap	1185.127	1	1185.12	1.13	.14
Measurement * group (treatment vs. control)	5689.443	1	5689.44	5.46	.01
Error(self-efficacy)	29127.090	28	1040.25		

Figure 4 illustrates the directional changes in the two groups.

Figure 4.

Within-Subject WSES Score Changes from First to Last Measurement



These results show a significantly greater increase between the first measurement and last measurement of self-efficacy for the treatment group than the control group.

Hypothesis 1 is supported.

Hypothesis 2

Hypothesis 2 predicted that work-related self-efficacy would enhance employment rates. To test this hypothesis, ANOVA was utilized to compare the average WSES measurement of all employed subjects (n=9), to that of all unemployed subjects (n=46). The employed group only contained subjects that participated in the supported employment program. No subjects in the control group found employment during the study period. For employed subjects this measurement included scores from Phase 5, 30 days post-employment. The results are reported in Table 6.

Table 6.

Comparison of Full Sample Last Measurement WSES Scores for Unemployed Subjects to Last Measurement Scores of Employed Subjects.

	Mean	Standard deviation	N		
Unemployed	239.1	68.44	46		
Employed	301.8	48.32	9		
Total			55		
	Sum of Squares	df	Mean Square	F	Sig. (One-tailed)
Between Groups (employed vs. unemployed)	29599.64	1	29599.64	6.81	.006
Within Groups	229997.07	53	4339.56		
Total	259596.71	54			

Mean WSES scores of unemployed subjects at the last available measurement was 239.1, and mean scores of employed subjects at last measurement was 301.8. These two scores are significantly different from each other, $F(1, 54) = 6.81$, ($p = .006$).

A second analysis, using the same measurements of last available WSES including post-employment scores for employed subjects, was conducted using only treatment group subjects. The results are reported below in Table 7.

Table 7.

Comparison of Treatment Group Last WSES Measurement Scores for Unemployed and Employed Subjects.

	Mean	Standard deviation	N		
Unemployed	253.6	57.71	27		
Employed	301.8	48.98	9		
Total			36		
	Sum of Squares	Df	Mean Square	F	Sig (one-tailed)
Between Groups (employed vs. unemployed)	15648.14	1	15648.14	5.02	.01
Within Groups	105799.85	34	311.76		
Total	121448.0	35			

As found in the full sample comparison, the scores of employed and unemployed subjects are significantly different $F(1, 35) = 5.02, (p = .01)$. Although post-employment services are an important part of Supported Employment, these analyses are somewhat problematic as they include post-employment WSES scores. Since post-employment treatment includes actual work, and the impact of the work as well as post-employment services may be impacting WSES scores this measure is somewhat problematic. In order to test Hypothesis 2 more directly, an additional analysis was conducted using ANOVA, but excluding post-employment WSES scores. The analysis was conducted comparing last available measurement for the full sample of unemployed subjects (both treatment and control group) to the last available measurement from employed subjects, excluding

the final post-employment scores. Results are reported below in Table 8.

Table 8.

Comparison of Full Sample Last Measurement WSES Scores for Unemployed Subject to Last Measurement WSES Scores of Employed Subjects, Excluding Post-Employment Scores.

	Mean	Standard deviation	N		
Unemployed	239.5	67.05	46		
Employed	267.5	57.19	9		
Total			55		

	Sum of Squares	df	Mean Square	F	Sig.(one-tailed)
Between Groups (employed vs. unemployed)	5903.82	1	5903.82	1.36	0.13
Within Groups	228502.45	53	4311.36		
Total	234406.27	54			

Results indicate no significant differences in scores between the employed and unemployed groups, $F(1, 54) = 1.36$, ($p = 0.13$). A second analysis compared last available WSES scores from treatment group only, as compared to employed subjects, excluding post-employment scores. Results are reported below in Table 9.

Table 9.

Comparison of Treatment Group Last Measurement WSES Scores for Unemployed Subject to Last Measurement WSES Scores of Employed Subjects, Excluding Post-Employment Scores.

	Mean	Standard deviation	N		
Unemployed	253.6	57.71	27		
Employed	267.5	57.19	9		
Total			36		
	Sum of Squares	df	Mean Square	F	Sig. (one-tailed)
Between Groups	1292.37	1	1292.37	0.39	0.26
Within Groups	112774.77	34	3316.90		
Total	114067	35			

As with the full sample comparison, the difference in scores was not significant, $F(1, 35) = 0.39$, ($p = 0.26$). To summarize, when the final, post-employment WSES scores were included, self-efficacy was related to employment outcomes. However, when scores included only pre-employment treatment, it was not. Thus there is mixed support for hypothesis two, which predicted that higher rates of WSES would be associated with higher rates of employment.

Chapter IV: Discussion

The unemployment rate for persons with SMI is among the highest of any disability population (Muesar et al., 2001). This situation is deplorable given that most such persons want to work (McQuilken et al., 2003) and can work (Bond, 2004). The benefits of competitive work include important personal and financial gains (Blank & Hayward, 2009). Although there is a large and growing body of research on the effectiveness of Supported Employment over other forms of vocational services (Bond, 2004; Bond, Drake, & Becker, 2008), access to these services is limited, with less than 25% of those with SMI receiving any vocational services (Lehman & Steinwachs, 1998; Hollingsworth & Sweeney, 1997).

Though Supported Employment is well supported in the literature as a highly effective method (Bond, 2004; Bond et al., 2008), with standardized practices and a fidelity scale (Catty et al., 2008), the mechanisms for the model's success is less well understood. Self-efficacy has been shown to be correlated with work outcomes for the SMI population (Lent et al., 1989; Regenold et al., 1999) and also been shown to be impacted by vocational treatment (Kreishol et al., 2000).

Towards a goal of exploring the effect of Supported Employment on vocational self-efficacy for an SMI population, this study proposed two hypotheses: that participation in Supported Employment programs would enhance work-related self-efficacy for those individuals with SMI, and that higher levels of WSES would lead to improved vocational outcomes. This section provides a summary of the study's findings,

how they relate to existing literature, implications for policy and practice, and suggestions for further research.

Hypothesis 1

Hypothesis 1 stated that participation in Supported Employment would increase subjects' vocational self-efficacy. Overall, this study found evidence that participation in the Supported Employment Program leads to an increase in self-efficacy. The finding that treatment increases vocational self-efficacy is important because it demonstrates that the Supported Employment program:

1. Was not successful solely due to a selection effect, whereby "job ready" subjects enrolled in vocational support
2. Did not simply provide a vocational service, but enhanced the participants' perception of themselves as capable job seekers and employees.

Given the many losses suffered by persons with SMI, in terms of both personal identity and the deeply discrediting social stigmata attached to mental illness, disability and unemployment, this finding is encouraging. It implies that programs targeting employment readiness skills positively impact clients who engage in services even if they do not become employed. Self-efficacy, as opposed to previously investigated demographic variables such as past employment history, age or criminal history, can be impacted through experiences, and guided by vocational counselors. Thus, this study suggests that clients who engage in vocational services show higher rates of work-related self-efficacy not because of some variable leading them to choose to engage in services, but because treatment enhances work-related self-efficacy.

If treatment changes WSES scores, then it is possible that the WSES can be used to guide and modify treatment, and provide feedback to vocational counselors and administrators. Related clinical vocational programs hoping to target and improve treatment can utilize this information toward the goal of maximizing scarce vocational resources and increasing vocational outcomes. For example, clients who demonstrate low scores on items such as the ability to manage a schedule may be set up with interventions designed to provide practical support for this skill, or program-wide average low scores on job finding skills could result in program-wide development of more career search specific groups or classes.

Supported Employment treatment effects on WSES. The following section outlines the phases of Supported Employment treatment in this study using self-efficacy theory and Supported Employment research findings to explore roles that each intervention may have played in impacting treatment subjects' WSES scores.

Pre-test finding. Pre-test comparisons showed no significant differences in self-efficacy between treatment and control groups. On entering the program, the treatment group did not feel more confident or capable in finding paid employment. This suggests that a self-selection bias did not differentiate the groups in terms of initial self-efficacy, and supports previous findings that the *treatment* is a primary factor differentiating clients who participate in Supported Employment from those who do not (Bond & Drake, 2008). This is an important distinction, as demographic variables such as substance abuse are not found to negatively impact success in vocational services, but rather, they negatively impact *referral* to such services (Biegel et al., 2009). Such a stigma, on the part of referral sources within mental health or vocational agencies, represents yet another

barrier to employment for a population already faced with many systemic obstacles. This finding provides further support for the “no exclusionary” policy that is an essential evidenced-based practice within Supported Employment.

Treatment 1 - Psychoeducation. For individuals with mental illness, the transition from a largely unstructured daily schedule to the strict attendance requirements of competitive employment can be challenging. As opposed to drop-in groups, Choosing Your Next Job requires attendance, punctuality, and participation, setting expectations that mirror the requirements of real-world employment and education. In addition to the implicit time management expectation, the classes’ curricula stress symptom management, addiction triggers and relapse prevention, job market education, social security work incentives benefit education, time management, and competitive workplace expectations. Previous research has found that even minimal classroom work, such as creating a resume with a client, can impact domain-specific self-efficacy (Krieshol et al., 2000). Therefore, increases in WSES may be attributed to the close matching between the classroom curricula, classroom attendance expectations, and the items of the WSES. While volunteer jobs are tailored to individual client job goals, they result in a variety of experiences ranging from very simple tasks performed two hours per week to full-time on the job training. Choosing Your Next Job offers a uniform, straightforward, and supportive learning experience very closely aligned with basic work skills whose expectancies are measured in the WSES. These include identifying a job goal, as well as building a resume, and collecting references. Basic work skills, such as managing stress, attending appointments on-time, and appropriate social interactions are other important

aspects. These issues are addressed explicitly in the classroom and in individual sessions for clients struggling to acquire these skills.

Much of the Supported Employment literature has not been supportive of pre-employment training, stressing rapid job placement instead (Becker et al., 2001; Bond et al., 1996). The results of this study, along with evidence supporting cognitive remediation in vocational services (Bond & Drake, 2008; McGurk, Wolfe, & Pascaris, 2007; McGurk & Wykes, 2008) indicate that the role of psychoeducation in Supported Employment warrants further investigation.

Treatment 2 - Volunteer work. Research on the therapeutic value of volunteer work or other types of situational assessments to predict vocational outcomes is mixed, though at least one study found that situational assessment performance predicts employment outcomes (McGuire, Bond, Evans, Lysaker, & Kim, 2007). From a theoretical perspective, a volunteer job should increase self-efficacy due to the job-specific mastery skills associated with it and the numerous opportunities for supportive development of core work skills. In addition, clients who participate in volunteer work often use their volunteer supervisor as a reference on a job application, a valuable asset for a job seeker and one that is commonly lacking for those who have been out of the workforce for a long time.

Although the volunteer job was an important part of this Supported Employment program, it is important to note that many clients did not complete volunteer work, instead stopping their involvement with the program after attending the Choosing Your Next Job class. Though out of the scope of this project, the rate of volunteer work drop-outs raises the question of whether the volunteer job represents a premature placement for

some clients who may have been overwhelmed by the experience. For clients with inadequate work-related self-efficacy, the transition from the very supportive classroom environment to a less forgiving “real world” environment may have been too stark. This may result in too many opportunities for small failures (e.g., a reprimand for being late, feeling stressed or overwhelmed, an increase in symptoms, or an inability to complete the job well enough) that could undermine the client’s perception of themselves being capable of paid employment. In this scenario, the experience may constitute a negative experience, resulting in dropping out.

This possibility underscores one of the important utilities of the WSES in a Supported Employment program: appropriate, supportive client interventions and program assessment. If the WSES had been used as part of the program, rather than a research tool, then clients who reported low scores could have been provided specific additional support by vocational counselors. For vocational counselors managing a large caseload, the WSES could be a valuable tool in assessing and implementing necessary treatment course changes.

Treatment 3 - Individualized job placement assistance. Treatment 3 consisted of 20 hours of individualized job placement assistance with a vocational specialist. This phase of treatment includes resume building, on-line job search, and interview skills training in a classroom setting. Although there is no formal curriculum, this phase is fairly concrete in its expected outcomes. Interviewing skills stand out as a primary goal, with particular attention to social skill deficits that may be a barrier to employment for clients. Clients are coached, both individually and in a group setting, on such basic skills such as eye contact, small talk, and appropriate dress and grooming.

Social skill deficits have been proposed as a major cause of the poor employment rates for persons with psychiatric disability (Argyle, 1992). Many studies and programs have concluded that social skills training for persons with psychiatric disabilities can be a useful and efficacious treatment to counteract social deficits (Corrigan, Schade, & Liberman, 1992; Tsang, 2010), though fewer studies have focused specifically on vocational social skills. A 2001 pilot program utilizing a randomized sample of clients with schizophrenia found that work-related social skills training alone increased clients' self-appraisal of their own social skills, clinicians' assessment of these client's social skills, and employment outcomes (Tsang, 2001). The same study reported that interventions such as mock interviews and role play are essential to developing this skill set (Tsang, 2001). These types of interventions are a main component of individualized employment search support and are commonly addressed as a group in the weekly Job Club group. This group utilizes several of Bandura's proposed strategies for learning (Bandura, 1986). These include goal setting for interviews, behavioral rehearsals in the form of role playing, positive reinforcement, and correction when needed. Opportunities for role modeling, another learning strategy (Bandura, 1986), is particularly rich in the highly group-based Supported Employment program. As opposed to vocational models with external services (Division of Vocational Rehabilitation, Worksource) Supported Employment services are integrated into the milieu of the community mental health program. Clients are therefore provided with vicarious experience through fellow clients as "role models" who share a similar diagnostic, economic, geographic and ethnic make-up. As research has shown, the closer the "match" between client and role model, the stronger its impact on self-efficacy (Schunk, 1987, 1990).

Treatment 4- Post employment. According to Bandura's (1977) framework of self-efficacy attainment, finding paid, competitive employment would constitute the paramount mastery experience for job-seeking clients, increasing work-related self-efficacy and leading to greater challenges and responsibilities. Given this framework, it is not surprising that the best demographic predictor of employment success is past employment history (Anthony et al., 1990).

Many studies have focused on the obtainment of a job as the final outcome in Supported Employment. Unfortunately, for persons with mental illness, keeping a job is often as great a challenge as finding one, and studies have found that often employment ends negatively or prematurely (Muesar, Becker, & Wolfe, 2001). For clients who are unprepared and unsupported in their new jobs, the challenges of maintaining those jobs may be overwhelming. It is very likely that losing a job would constitute a major negative experience, further reducing work-related self-efficacy and making it less likely that the client would continue to push toward future employment activities. Given the potential for mastery experiences, such as employment, to deeply impact self-efficacy either positively or negatively, providing such support is extremely important.

Hypothesis 2

Hypothesis 2 stated that higher rates of work-related self-efficacy would be associated with higher employment outcomes. This study found that WSES scores were associated with higher employment rates when the WSES score included post-employment scores, but no association when they did not include this final score. Because the two variables, treatment (post-employment services) and employment outcomes are inextricably bound, interpretation is problematic. Previous studies using

much larger sample sizes than the present one have found that WSES scores for clients enrolled in vocational support were related to subsequent employment success (Kreishol, Ulcin, Hecox, & Wettersten, 2000; Regenold, Sherman, & Fenzel, 1999).

Although numerous studies have attempted to find definitive person-related predictive factors of vocational success for Supported Employment participants, results have been mixed (Michon et al. 2005). Though past employment is one of the few predictive variables found (Anthony et al., 1990), work history has no affinity for treatment, meaning it is an inalterable, historical variable and as such is not particularly clinically useful for counselors attempting to help clients move forward with job search efforts. Self-efficacy, in contrast, has been shown to be correlated with both future employment success and past employment (Reginold et al., 1999), and self-efficacy alone has been found to be predictive of employment success (Anthony, 1994; Solberg et al., 1994).

Implications

The WSES is a useful tool in measuring a client's vocational self-efficacy as a unitary construct, but also to identify and remediate specific issues. The scale can be used by clinicians to evaluate and adjust treatment for their clients, and to identify areas where a client may need particular support. In this way, use of the self-efficacy scale in treatment may help to avert negative career learning experiences, leading to an increased and sustained job search effort resulting in higher work rates. The WSES may also serve as an engagement tool for clinicians working with clients who express interest in employment. Its use could guide practitioners towards areas identified by the client as strengths or weaknesses as well as provide useful information in program assessment.

Though the Supported Employment model advocates rapid job placement, this study suggests that standard activities of Supported Employment are associated with higher rates of vocational self-efficacy and it is self-efficacy that has been shown to be one of the few modifiable variables that is consistently correlated with higher job obtainment. Further investigation may lead to better, more successful vocational interventions.

Limitations

Limitations of this study include small sample size and data collection mechanisms. The small sample size in this study did not allow for the use of statistical methods such as regression and survival analysis, preventing a fuller examination of the proposed hypotheses, and preventing detailed analysis of each phase. Other limitations of this study were the programmatic changes that occurred in the participating mental health agency during data collection. These changes included the switching of a long-established meeting room to another room on a different floor. Though this change may seem minor, it resulted in serious disruption. Occurring in the middle of a 1-week cycle of Choosing Your Next Job, some clients continued to go to the old room, others expressed discomfort with having to go to an unfamiliar floor of the building, and staff reported the move was disruptive to the teaching experience. There was also considerable staff turnover during the year of the study, with a manager and two vocational counselors leaving in close succession, resulting in a shortage of staff for several months while new hires trained. Although these disruptions presented problems for data collection, as a field experiment this study operated in a “real world” setting with “real world” problems, sacrificing some internal validity for external validity. One advantage that this study had was that it operated from standardized practices outlined by the Supported Employment

Fidelity scale (Bond et al., 1997). However, the whole sum of the logistical issues described likely compromised the treatment and therefore also somewhat compromised generalizability of the findings to different treatment programs.

Although treatment and control groups did not differ significantly in WSES scores at pre-test, and were similar demographically, the issue of selection bias in the referral process is troubling. Although efforts were made by vocational staff to recruit clients directly, for example, talking to clients about the program as they visited the lunch room, many clients were referred by case managers. Case manager referral issues were out of the scope of this project, but they represent a type of selection bias that threatens internal validity. As noted earlier, bias in referral to vocational programs has been reported (Biegal et al., 2009) raising a question of interaction between the referral process, participation in treatment, and any subsequent encouragement or support this participation may have enlisted from the case manager.

A similar issue affecting internal validity is the setting, simply being given attention, spending time with staff and clients in a classroom, and so forth. Although the testing process between treatment and control groups was comparable, this design did not utilize a second “placebo” control group to address the possible effect of non-specific effects like setting, staff attention, and the innumerable possible interactions that entails. Tied to this issue is that of a possible Hawthorne effect in this study, whereby treatment participants responded to being in “any” treatment (Adair, 1984). Although both groups were given the WSES, the treatment group was certainly aware that it was, indeed, a treatment group. And, though no feedback was provided to clients on their scores, or directional changes in them, this issue of social desirability on the part of clients warrants

consideration, particularly as the test was administered to the client by vocational counselors who were instructing and guiding them.

Another issue is the question of how accurately clients with SMI rate themselves on the WSES. The measure is certainly subjective, measuring individual's confidence to accomplish specific tasks, however, as noted in Waghorn, Chant and King's (2005) discussion of the development and testing of the WSES, it is not known if people who have no recent or even remote experience with the tasks identified on the WSES rate themselves differently than those who do. In other words, we do not know if more recent experience with tasks leads to a more or less accurate personal assessment of those skills. Can clients who have not interviewed or applied for a job in many years accurately rate their ability to do so? If not, this is a major limitation to this study and any study that utilizes the WSES or a similar measurement, particularly in the analysis of a control group. Another limitation of this study is the issue of repetitive testing, with the possibility of test-retest variability unrelated to treatment. Although Harrison et al. (2010) reported that the WSES performed strongly on short-cycle test-retest reliability, that study tested participants only twice, whereas participants in the current study were tested up to five times.

Suggestions for future research

This study found that Supported Employment program participants had increased work-related self-efficacy when compared to control subjects. However, due to missing data, the impact of individual phases of treatment on WSES could not be assessed. An accurate assessment of these phases would provide a better understanding of the role of these individual treatments in the well-documented success rates of the Supported

Employment model, and provide a possibility for controlled studies measuring treatment innovation and enhancement. Additional treatment focus on cognitive remediation is one suggested enhancement to current Supported Employment treatment that merits investigation.

Additional research on the role of criminal history and substance abuse in vocational rehabilitation is also recommended. Both factors are extremely common in job seekers with SMI. Stigmata and discrimination towards individuals with criminal or substance abuse histories is unfortunately also common. Additional research is needed to better understand the impact of these factors on employment rates for SE participants, with particular attention to the impact of these variables on vocational rehabilitation policy and individual clinical services.

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