

THE IMPACT OF THE WORKING ALLIANCE ON VOCATIONAL OUTCOMES
FOR PEOPLE WITH SEVERE MENTAL ILLNESS ENROLLED IN EMPLOYMENT
PROGRAMS

A Thesis
Submitted to the Faculty
of
Purdue University
by
Marina Elizabeth Kukla

In Partial Fulfillment of the
Requirements for the Degree
of
Master of Science

August 2007
Purdue University
Indianapolis, Indiana

ACKNOWLEDGEMENTS

I would like to acknowledge Gary Bond, John McGrew, Michelle Salyers, and Amanda Jones for their assistance in completing this project.

TABLE OF CONTENTS

	Page
LIST OF TABLES	vi
ABSTRACT	viii
INTRODUCTION	1
Background	1
Working Alliance—Framework and Theory	3
Bordin’s Model: (1) Tasks and (2) Goals	5
Bordin’s Model: (3) Bonds	5
Working Alliance Formation	6
Working Alliance and Rehabilitation Outcomes	8
Working Alliance and Client Perspectives	11
Working Alliance and Employment Rationale Summary	11
Hypotheses 1-4.....	12
Diversified Placement Approach	13
Individual Placement and Support Model.....	13
Working Alliance and IPS & DPA	14
IPS & DPA Working Alliance Rationale Summary	15
Hypotheses 5-6.....	15
Potential Confounds.....	16
METHOD	18
Research Context	18
Overall Design	18
Setting	19
Sampling	19
Procedures.....	20

	Page
Vocational Worker Characteristics	20
Vocational Worker Training	20
Model Implementation	21
Model Fidelity Assessment	21
Data Collection	22
Measures	22
Background Characteristics	22
Working Alliance Measure	23
Overall Satisfaction with Services	24
Employment Outcomes	25
Statistical Design	25
Power Analysis	26
Data Analysis	26
Preliminary Analyses—Part One	27
Exploratory	27
Reliability	28
Validity	28
Potential Confounds	28
Descriptive Data	29
Hypothesis Testing—Part Two	29
Hypotheses 1-4	29
Hypotheses 5-6	30
Supplementary Analyses	30
RESULTS	32
Sample Descriptive Statistics	33
Item Level Analyses	33
Internal Consistency and Inter-item Correlations	33
Working Alliance Item Descriptives	34
Working Alliance Total Descriptives	34

	Page
Stability Across Time	35
Criterion-related Validity.....	35
Descriptive Statistics for Two-year Employment Outcomes.....	35
Potential Confounds.....	36
Relationships Between Predictor Variables.....	37
Hypotheses.....	37
H1: First Working Alliance and Total Duration of Paid Employment.....	37
H2: First Working Alliance and Mean Paid Job Tenure.....	38
H3: Average Working Alliance and Total Duration of Paid Employment.....	38
H4: Average Working Alliance and Mean Paid Job Tenure	39
H5 & H6: IPS/DPA and Working Alliance	39
Supplementary Analyses.....	39
Exploratory Factor Analysis (EFA).....	39
Working Alliance Factors, Working Alliance Items, and Employment Outcomes	40
IPS & DPA: Working Alliance Factors and Working Alliance Items.....	41
Vocational Worker Consistency	41
Participants Who Did Not Name a Vocational Worker.....	42
DISCUSSION.....	43
Working Alliance Measure.....	43
Hypotheses Conclusions.....	44
Study Limitations.....	48
Future Research	51
LIST OF REFERENCES.....	53

LIST OF TABLES

Table	Page
Table 1: Background Characteristics and Measures	61
Table 2: Working Alliance Measure Items	61
Table 3: Bordin's Working Alliance Model (1979) and Working Alliance Measure Items	62
Table 4: Descriptive Statistics of Participant Background Characteristics	63
Table 5: Working Alliance Scale Item and Total Descriptives and Correlations (N=91)	64
Table 6: Test Retest Reliability and Working Alliance Stability over Time: Zero-order Correlations and Paired Samples t-tests Between Working Alliance Periods	65
Table 7: Criterion-Related Validity: Descriptives and Zero-order Correlations Between Working Alliance Scores and Satisfaction with Vocational Services Averaged Across the Study (N=91)	66
Table 8: Descriptive Statistics and Independent Groups t-tests for Confounds and Two-year Paid Employment outcome	67
Table 9: Confounding Variables: Descriptive Statistics and Zero-order Correlations with Two-year Paid Employment Outcomes	68
Table 10: Relationships Between Predictor Variables: Zero-order Correlations and Independent Groups t-tests (N=91)	69
Table 11: Multiple Regression Summary Table for Hypotheses 1-4	70
Table 12: Descriptive Statistics and Independent Groups t-tests for Hypotheses 5-6, Working Alliance Factors, and Working Alliance Items	71

Table	Page
Table 13: Univariate Correlations Between Working Alliance Item Means, Working Alliance Factor Means, and Employment Outcomes Across the 2-year Study Period (N=91).....	72
Table 14: Consistency of Vocational Worker Named at Semi-annual Follow-up Periods for Participants Working in Paid Employment.....	72
Table 15: Descriptive Statistics and Differences Between Participants Who Named a Vocational Worker and Reported on the Working Alliance and Participants Who Did Not Name a Vocational Worker and Report on the Working Alliance at Semi-annual Follow-up Periods When They Were Working in Paid Employment	73

ABSTRACT

Kukla, Marina Elizabeth. M.S., Purdue University, August 2007. The Impact of the Working Alliance on Vocational Outcomes for People with Severe Mental Illness Enrolled in Employment Programs. Major Professor: Gary R. Bond.

This study was a subset of a large two-year randomized controlled trial of two employment programs providing services to people with severe mental illness (SMI). Because prior research has found that the strength of the relationship, or working alliance, between service providers and people with SMI is related to a variety of beneficial outcomes, the purpose of the current study was to address the working alliance between participants and their vocational workers and its association with employment outcomes, including the total duration of paid employment over two years and mean paid job tenure after two years. Another primary purpose of the current study was to determine whether working alliance differences exist between a team vocational approach (Diversified Placement Approach) and an individual vocational approach (Individual Placement and Support Model). The final aim of the current study was to investigate the psychometric properties of the ad hoc scale utilized to measure the working alliance. Contrary to expectations, no relationship was found between the working alliance and employment outcomes after two years. As expected, it was found that participants in the individual vocational approach (IPS) had higher working alliance scores across the study than participants in the team vocational program (DPA). Finally, the working alliance measure used in this study was found to have promising psychometric properties, including adequate criterion-related validity and test-retest reliability, although the internal consistency was a bit low. The scale items are a loose fit with existing theory, however, necessitating the addition of items and revision of the current scale and underlying theory to enhance its utility in clinical and research settings.

INTRODUCTION

Background

People with severe mental illness face many life hardships, including difficulty obtaining and maintaining employment, even though the desire to work is high amongst this group (McQuilken et al., 2003). Specifically, at least 85% of people with a psychiatric disability in the United States are unemployed (National Organization on Disability, 1998). In the last few decades, vocational programs have risen in many states aimed at helping this group return to work and stay employed. However, the client dropout rate in these programs is substantial, possibly as high as 40% in some studies (Bond, Drake, Mueser, & Becker, 1997) limiting the effectiveness of these rehabilitation efforts. Because of the crucial role employment plays in the rehabilitation of this group and in an effort to improve program retention rates, strides have been made in empirically validating vocational approaches.

Specifically, supported employment has been shown to be an evidence-based practice used in the rehabilitation of people with severe mental illness (SMI). To date, 14 randomized controlled trials have been conducted examining supported employment in comparison with other vocational models. Key review articles of these studies indicate that supported employment is more effective in helping clients with SMI obtain competitive employment compared with other approaches, such as prevocational training (Bond, 2004; Crowther, Marshall, Bond, Huxley, 2001). Further, competitive employment associated with supported employment has been linked with other positive vocational outcomes including a higher pay rate for clients (Gold et al., 2006; Crowther et al., 2001), and nonvocational outcomes, including improved self-esteem (Bond, 2004; Bond et al., 2001; Van Dongen, 1996), symptom control (Bond, 2004), and quality of life (Fabian, 1992).

However, supported employment is only effective in securing competitive employment for approximately 60% of those enrolled in the program and in response, research attention has turned to explaining specific factors of success and failure. For example, researchers have investigated program level factors, such as fidelity to tenets of the employment model, in order to explain some of the variation in vocational outcomes among supported employment programs (Becker, Xie, McHugo, Halliday, & Martinez, 2006; Corbiere, Bond, Goldner, & Ptasinski, 2005). Studies have also addressed the effects of client level factors, such as work history and symptom severity, revealing that a richer work history (Burke-Miller et al., 2006; Thompson, Boeringa, Thornby, & Lewis 1995) and less negative psychiatric symptoms (Razzano et al., 2005; McGurk & Mueser, 2004) lead to better employment outcomes.

Research in this area has also recently begun recognizing the role of employment specialist interventions in explaining vocational outcomes, although to date, studies have been few. Further, from other fields of research, relationship factors have also been linked with successful rehabilitation outcomes. For example, therapy literature has extensively looked at the working alliance in clinical populations and illustrated its positive impact on treatment outcomes and client satisfaction (i.e. Klinkenberg, Calsyn, & Morse, 1998; Blatt, Zuroff, Quinian, & Pilkonis, 1996). Studies of psychiatric rehabilitation have further demonstrated a promising association between the client-service provider working alliance and rehabilitation outcomes, such as more positive attitudes towards medication compliance in a sample of clients with schizophrenia (Frank & Gunderson, 1990). Another study found that low income consumers with severe mental illness especially valued the sense of personal “connectedness” that they gained through both formal and informal interactions with their practitioner and the investigators ascribed this to an increased sense of social inclusion (Ware, Tugenberg, & Dickey, 2005). Social inclusion is especially important for this population who are often branded as “outcasts” and stigmatized in the community, and for those who are employed, in the workplace.

However, there has been a dearth of literature looking at the relationship between the client and the vocational workers providing job support in employment programs.

Clients typically interact frequently with their vocational workers in activities like job searching, on site job training, and follow along support visits. Hence, this set of interactions is one of the most salient features of the rehabilitation process, necessitating further investigation as to the nature of the relationship between client and vocational worker as a “common factor” in the successful implementation of employment services.

Therefore, given the vital nature of the working alliance in other helping realms and its implications for people with SMI who are employed or wish to work, the current study was done in order to extend this research into the employment arena and explore the working alliance between clients and their vocational workers in relationship to vocational outcomes. In addition, because people with SMI are provided vocational services by a variety of different types of programs that may affect the formation and maintenance of the working alliance, the current study also addressed differences in the strength of the working alliance between two common vocational approaches: a team vocational approach and an individual supported employment approach.

The subsequent discussion will define the theory of the working alliance, the components that promote its formation with a particular emphasis on those that were used to measure this concept in the current study, as well as its influence on outcomes. In addition, the tenets of the two vocational programs that were implemented in this study, the Individual Placement and Support Model and the Diversified Placement Approach, will be discussed and their impact on the formation of the working alliance will be delineated.

Working Alliance—Framework and Theory

The working alliance, also known as the “working relationship,” “therapeutic alliance,” or the “helping relationship,” has long been investigated; it was first conceptualized by Sigmund Freud’s psychodynamic theory in the early 1900s and has since been the subject of thousands of studies. This first conceptualization centered around positive transference involving the client’s feelings and perceptions of the therapist as possessing authority, resulting in a distortion of the true relationship between the two individuals. Freud later revised his theory to include the possibility of a genuine

relationship between the client and the therapist, ultimately providing the client with the opportunity for self-understanding and change (Freud, 1913 as cited in Horvath & Luborsky, 1993). In the 1950s, Carl Rogers re-conceptualized the therapeutic alliance as a function of the qualities of the therapist, including the capacity for respect, empathy, genuineness, and positive regard. Further, Rogers posited that it is these conditions under which the foundation for a fruitful relationship between the client and therapist may develop, allowing the client to produce positive therapeutic change (Rogers, 1957 as cited in Hougaard, 1994).

While these historic frameworks of the working alliance offer significant utility in some therapy settings, their tenets explain only part of the working alliance in employment programs. These programs involve more practical, concrete tasks and interaction between the vocational worker and the client in community settings. Fortunately, Bordin's more recent model of the working alliance (1979) may offer a more relevant conceptual framework for psychiatric rehabilitation, as it incorporates portions of these past theories, especially that of Rogers, and presents a broader, pragmatic approach that can be utilized outside of the therapy context. As a result, Bordin's theory has been used in conceptualizing the working alliance in the field of case management (Howgego, Yellowlees, Owen, Meldrum, & Dark, 2003) emphasizing the principle that alliance is not in itself an intervention, but instead a means of facilitating positive change across a wide range of outcomes that are very pertinent to rehabilitation (Horvath & Luborsky, 1993).

The specific components of Bordin's theory expand upon other definitions of the working alliance that consider only the affective relationship or emotional bond between the client and therapist to also include tasks, or the collaborative nature of the relationship in which each party understands and agrees upon his or her individual duty to perform particular assigned tasks and goals, or the mutually agreed upon ideal outcomes of the activity or therapy (Bordin, 1979). Further, the exact mechanism of action that these three components (1) tasks, (2) goals, and (3) bonds exert on outcomes is somewhat unclear, but it is likely that they involve an inter-related process that provides an environment for positive interpersonal interaction and change.

Bordin's Model: (1) Tasks and (2) Goals

In Bordin's model (1979), tasks and goals are separate entities, yet according to this theory, they also fall under the broad umbrella of collaboration and contribution to form the practical aspects of the working alliance and hence, they will be considered together in this discussion. In the implementation of employment services for a psychiatric population, collaboration in tasks and goals is facilitated in some approaches primarily through a strong emphasis on client preference and empowerment, key components of the IPS (Bond, Drake, Mueser, & Becker, 1997) and DPA models (Koop et al., 2004). Contributions may be understood from two perspectives. First, on the part of the client, contribution is achieved through a variety of activities. For example, research has illustrated that the majority of people with SMI have a strong desire and motivation to work (Drake, 1998), and hence, many are eager to take an active role in finding a job and share in the decision making process (Alverson, Carpenter, & Drake, 2006). Client tasks also involve the retention of employment once a job placement is secured, achieved through the successful performance of job duties and other job requirements (i.e., wearing proper work attire, arriving to work on time). Secondly, on the part of the vocational worker, contribution is achieved through a collection of support activities that may include aspects such as ongoing follow along support, communication with employers, and feedback to the client regarding job performance.

Bordin's Model: (3) Bonds

Achieving collaboration and contribution by both parties in tasks and goals may enhance the emotional component of the working alliance or "bond" and vice versa. This interplay is illustrated by the findings from two studies on assertive community treatment (ACT), an evidence-based practice for the rehabilitation of people with SMI that has practical and emotional components that are similar to those in the client-vocational worker relationship. McGrew, Wilson, and Bond (1996) asked clients with SMI about the components of ACT that they liked best and those that were perceived as most helpful to them in their rehabilitation. Clients mentioned non-specific components most often, especially those pertaining to the helping relationship with their case managers. Those

helpful ingredients included aspects such as “someone to talk to” (bond), the quality of their relationship (bond), help with typical daily problems (case manager contribution/collaboration), and availability of staff (case manager contribution). Similarly, a more recent ACT study (Leiphart & Barnes, 2005) found that clients were able to trust their service providers over time (bond) and accept their input and encouragement freely (collaboration) under the conditions in which service providers listened and provided practical support and assistance with daily problems (contribution) in a caring fashion during the first three months of the relationship.

The following discussion will review the correlates and factors associated with the formation of the bond or relationship between service providers and client across service domains, before delving into a review of literature regarding the working alliance and outcomes.

Working Alliance Formation

The formation of the working alliance between the client and therapist, or in the case of employment programs, the vocational worker and the client, is the result of a complex and flexible process that researchers have attempted to explain for decades. Some components that research has supported in regards to therapeutic improvement include empathy, genuineness, and positive regard that were first articulated by Roger’s theory and transformed into practice through client-centered therapy. For example, an important review of empirical studies concluded that empathy, genuineness, and positive regard as displayed by cognitive-behavioral therapists correlate highly with measures of the therapeutic alliance and are associated with positive patient behaviors, such as a willingness and openness to discuss problems, as well as direct symptom improvement (Keijsers, Schaap, & Hoogduin, 2000). Another study by Bedi (2003) expanded upon these Rogerian characteristics using a qualitative method in which counseling clients were asked to elaborate upon observable behaviors and verbalizations that aided in alliance formation with their therapists. The authors found that interpersonal and relationship factors such as care, honesty, support, and guidance were considered as highly important in alliance formation from the perspective of the client. A more recent

study conducted by Bedi (2006) employed concept mapping to determine the client's perspective on alliance formation, finding that in addition to an emphasis on factors such as care, honesty, listening skills, validation, and guidance, clients emphasized therapist activities such as providing emotional support and informational support in the form of education (i.e. recommendation materials, homework, skills training).

Research addressing the case manager-client alliance is consistent with the findings from the psychotherapy literature, suggesting that service provider actions and characteristics are imperative to alliance formation. For example, Klinkenberg et al. (1998) conducted a study addressing the working relationship in a sample of homeless people with SMI who were receiving case management services. The researchers found that the strength of the working alliance was modestly associated with a higher number of program contacts made by the case manager, although the direction of causality was somewhat unclear. Another study found that program contacts, supportive services, and mental health contact were positively associated with the strength of the working alliance between homeless clients with SMI and their rehabilitation service providers (Calsyn, Morse, & Allen, 1999). Nufer, Rosenberg, and Smith (1998) surveyed case managers and clients with disabilities and found that both groups consistently endorsed the majority of the survey items as important in regards to service provision and rehabilitation, in particular, timely services as provided by case managers, services that meet the needs and desires of the clients that are put forth in an enthusiastic, motivating manner, and reasonable caseload sizes in order to allocate sufficient time for each client. A more recent study addressed the practitioner-client relationship from the perspective of low income SMI clients and concluded that practitioner caring, availability, flexibility, as well as practitioners taking extra time to talk with clients, and client input into treatment are essential aspects to the working relationship and to effective service provision in general (Ware et al., 2005).

In employment programs, several critical elements to the working alliance exist that are somewhat consistent with Bordin's model (1979), especially in regards to the emotional bond aspects (criticalness, stressfulness, satisfaction, perceived emotional support). Other important elements include frequency of feedback, frequency of contact,

and perceived informational support that may be broadly reflective of the pragmatic tasks and goals (collaboration/contribution) components of the model. These variables have been shown to be associated with the working alliance in past research. For example, Harmon et al. (2005) conducted a study in which therapy clients were provided feedback throughout therapy regarding their treatment progress, leading to a greater improvement in symptoms. This study also looked at the therapeutic alliance and laid out an intervention framework to be implemented when this relationship is “ruptured,” asserting that positive feedback provided to the client is as an effective tool for alliance repair purposes. Research has also found that case manager frequency of contact with clients is important for the development of a strong working alliance in psychiatric rehabilitation settings, although effect sizes have been modest (Calsyn et al., 1999; Klinkenberg et al., 1998). In a more recent study, Calsyn, Klinkenberg, Morse, and Lemming (2006) found that a greater number of program contacts made by ACT case managers were associated with a stronger perceived working alliance. Other research providing evidence for the importance of contact frequency includes a study conducted by Ware et al. (2004), in which researchers found that practitioner availability and contact were seen as important service components that promoted feelings of “connectedness” between clients with SMI and their practitioners. Instrumental support, or tangible support, has been identified by therapy clients as crucial activities of the therapist in the development of the working alliance (Bedi, 2006) and in ACT, a greater perceived working alliance has been associated with practical support, such as help with transportation (Calsyn et al., 2006). Walker-Buck and Alexander (2006) found that consumers with SMI cited instrumental support, including employment services, housing assistance, and help with benefits as the most valuable aspect of their relationship with their case managers. In terms of employment programs like IPS and DPA, such practical support defines many of the day-to-day job duties of vocational workers.

Working Alliance and Rehabilitation Outcomes

Psychotherapy research has consistently demonstrated that a strong therapeutic alliance is associated with positive treatment outcomes, such as improvement in

psychopathology symptoms (i.e. Blatt et al., 1996). More recently, reviewers of rehabilitation literature have reached similar conclusions regarding the essential nature of the working alliance in the quality of services and outcomes for people with SMI. McCabe and Priebe (2004) conducted a review of empirical studies on the therapeutic relationship in the treatment of psychiatric illness and concluded that despite the varying ways the therapeutic alliance has been operationalized and measured, it appears to be a valid predictor of clinical and rehabilitation outcomes, such as symptom severity, time spent in the hospital, quality of life, and social functioning. For example, one study addressed the working alliance from the perspective of clients with SMI and rehabilitation therapists and found that the working alliance was associated with the attainment of overall rehabilitation goals in cross-sectional analyses, although effect sizes were modest and the same results were not found prospectively (Gehrs & Goering, 1994). Further, Frank and Gunderson (1990) conducted a 2-year longitudinal study as a subset of a larger randomized controlled trial and found that the quality of the therapeutic alliance between the client and the service provider was associated with better global functioning, continuation in treatment, more positive attitudes towards medication compliance, fewer positive symptoms, improved social functioning, and less illness denial by clients with schizophrenia. Similarly, Neale and Rosenheck (1995) found that a strong therapeutic alliance between clients and service providers in an intensive Veterans Affairs case management program predicted better outcomes in terms of reduced severity of psychiatric symptoms and better global functioning of clients. Solomon, Draine, and Delaney (1995) found that the strength of the working alliance between case managers and clients in ACT was associated with better quality of life, lower symptomatology, greater client satisfaction with services, and increased medication compliance. Another study investigating ACT and the working alliance found that case manager ratings of the working alliance were associated with a reduction in psychiatric symptoms, fewer days of homelessness, and an increase in income for clients with SMI (Calsyn et al., 2006). These findings that are consistent with an earlier study conducted by the same group of researchers in which the working alliance between clients with SMI and a substance use disorder and case managers as measured at 3 months and 15 months was positively

associated with the amount of time spent in stable housing and was negatively correlated with psychiatric symptoms, although effects sizes were modest (Calsyn, Morse, Klinkenberg, & Lemming, 2004). Chinman, Rosenheck, and Lam (2000) looked at the working alliance in a subset of the severe mental illness population, those who are homeless, and found that clients who had a stronger alliance with their case managers at 3 months had fewer days of homelessness after 12 months and greater life satisfaction than those clients who had a weaker alliance with their case managers. Another study assessing the working alliance between a sample of 54 homeless people with SMI found that the strength of the working alliance from the perspective of case managers was associated with improvement in homelessness, less alienation, and better interpersonal adjustment cross-sectionally (Calsyn et al., 1999). The working alliance has also been addressed in the small proportion of people with SMI who are at risk to engage in violent behaviors. Researchers found that a strong working alliance between client and therapist during early intervention was associated with fewer violent behaviors, such as physical attacks and fear inducing behaviors committed by clients during the first week of a psychiatric hospitalization after other relevant variables were controlled for (Beauford, McNiel, & Binder, 1997).

Vocational rehabilitation researchers have also begun investigating the working alliance between SMI clients and their vocational rehabilitation counselors (VRC), who are integral service providers in the quest for meaningful employment. Lustig, Strauser, Rice, and Rucker (2002) conducted a large scale study of clients with an extensive array of disabilities, including chronic medical conditions, psychiatric disorders, mobility and orthopedic impairments, mental retardation, visual and hearing impairments, and traumatic brain injury. The investigators found that unemployed and employed clients differed in regards to the quality of the working alliance with their VRC, such that those clients who were employed had a stronger relationship with their VRC compared with unemployed clients. Within the employed group, those clients with a stronger working alliance with their VRC had greater satisfaction with their current job and tended to have a more positive outlook about their employment future, as compared to clients who had a weaker working alliance with their VRC. Donnell, Strauser, and Lustig (2004) analyzed

a subset of the larger data set, which pertained only to clients with SMI, and confirmed the above results in regards to employment status, job satisfaction, and future job expectancy. In a further study, the researchers compared rural and urban clients, again concluding that employed clients have a better working alliance than unemployed clients, regardless of factors such as geographical location (Lustig, Weems, & Strauser, 2004).

Working Alliance and Client Perspectives

Past studies have typically assessed the quality of the alliance from both vantage points of the client and the service provider. Literature has shown that the perceptions of the therapeutic alliance may differ between clients and therapists in psychotherapy (Bedi, Davis, & Williams, 2005) and even more so between consumers with SMI and case managers in programs such as ACT (Calsyn et al., 2006), but it is the perceptions of the consumer that matter most in terms of predicting outcomes (Eames & Roth, 2000; Horvath & Luborsky, 1993). The notion of addressing the working alliance from the vantage point of the consumer is further underscored by the research initiative aimed at giving consumers a stronger voice in describing the helpful aspects of their own rehabilitation services, including relationships with service providers (i.e. Walker-Buck & Alexander, 2006).

Working Alliance and Employment Rationale Summary

Vocational workers provide intensive, direct, client-focused services to people with severe mental illness, a salient feature that is similar to the role of therapists in psychotherapy and particularly analogous to the role of case managers in psychiatric rehabilitation programs, such as ACT. Further, research has shown that the quality of the relationship between service providers and clients promotes treatment improvement in psychotherapy outcomes for individuals with SMI and general psychotherapy samples and enhanced psychiatric rehabilitation outcomes in regards to medication compliance (Solomon et al., 1995), symptomatology (i.e. Neale & Rosenheck, 1995), and interpersonal skills and social functioning (Frank & Gunderson, 1990). Recent vocational rehabilitation studies have also illustrated the link between the quality of the

working alliance and employment status (employed versus unemployed), job satisfaction, and future job expectancy (Donnell et al., 2004; Lustig et al., 2004; Lustig et al., 2002). Given the direction of this research trend, it was plausible to predict that the strength of the relationship between vocational workers and the clients would exert an effect on employment outcomes within the SMI population, and specifically, job tenure rather than other vocational outcomes (e.g. time to first job), since the focus of the current study was on employed clients only, after the job position had been obtained. Moreover, because the consumer perspective seems to be the most imperative in the prediction of rehabilitation outcomes (Eames & Roth, 2000; Horvath & Luborsky, 1993), it was considered reasonable to investigate this relationship by focusing on the client perspective only.

Given the preceding rationale, the following hypotheses are presented.

Hypotheses 1-4

H1: Clients' perceptions of the strength of the first working alliance (as measured at the first time period in which they were working in paid employment) with their vocational worker will be positively associated with their total duration of paid employment after 24 months.

H2: Clients' perceptions of the strength of the first working alliance with their vocational workers will be positively associated with their mean paid job tenure across jobs after 24 months.

H3: The average of clients' working alliance scores across the study will be positively associated with their total duration of paid employment after 24 months.

H4: The average of clients' working alliance scores across the study will be positively associated with their mean paid job tenure after 24 months.

The subsequent discussion is aimed at the second purpose of the study, as it will review the team vocational model, DPA, and individual vocational model, IPS, utilized in the study with an emphasis on their relation to the working alliance, concluding with a summary of important points and the rationale for the final hypotheses set forth.

Diversified Placement Approach

The Diversified Placement Approach (DPA) is a highly regarded employment model of psychiatric rehabilitation. DPA originated out of the clubhouse model and was developed at Thresholds, a psychiatric rehabilitation center in Chicago, Illinois. This model is characterized by an emphasis on paid employment, offering a broad array of employment opportunities, including not only competitive employment, but also sheltered employment, work crews, and agency run businesses. Clients often begin in a group placement that is less threatening than an individual placement and brings the opportunity to increase vocational outcomes, such as work-related skills, and nonvocational factors, such as social networks. These placements may be permanent or temporary and vary in duration, with job movement made at the discretion of the client and team in accordance with his or her progress, limitations, and the availability of jobs. In other words, clients typically progress through a series of job placements spanning from a less independent position to a completely independent competitive job at a rate commensurate with factors such as their comfort level, work skills, symptom severity, and transportation availability. However, it is important to note that DPA is flexible enough to allow for movement in the other direction, from more independent to less independent job placements when appropriate. In addition, other noteworthy tenets of DPA include small case loads (15 clients or less), an emphasis on communication between team members, prevocational activities and formal assessment aimed at gauging the consumer's readiness for work, broad job development that takes advantage of disability hiring initiatives and may involve placing several clients at the same community business, on the job training, and indefinite, on-going follow along support (Koop et al., 2004).

Individual Placement and Support Model

The Individual Placement and Support (IPS) model of supported employment was developed by Becker and Drake (1993) to be implemented in the services of people with SMI and reviews of randomized control trials have shown it to be a more effective approach in terms of job attainment and retention as compared to other employment

approaches (Bond, 2004; Twamley, Jeste, & Lehman, 2003). The components of the model include first and foremost, the integration of mental health treatment with employment services and the goal of competitive employment *only*. Other central principles of IPS include a rapid job search with a de-emphasis on prevocational activities, a focus on client choice and abilities, on-the-job training when necessary, and time-unlimited, ongoing follow along support provided by the vocational worker. Ongoing follow along support means that the vocational worker will engage in activities with the consumer, such as the teaching of job tasks, training of co-workers and supervisors addressing effective ways of working with the client, modification of the work environment to meet client's needs and address the limitations set forth by his/her disabilities throughout their tenure at a job. The model also advocates for small caseload sizes of the vocational worker as well as an emphasis on vocational activities only (as opposed to case management duties) (Bond, 1998).

Working Alliance and IPS & DPA

Important differences exist between the IPS and DPA models that may potentially influence the formation and maintenance of the working alliance. In the IPS model, clients are assigned one vocational worker who provides employment services and remains a constant throughout the client's time receiving employment services at the mental health rehabilitation agency, except in rare cases due to factors such as staff turnover. While other service providers, such as the case manager, may assist with job related activities, the majority of employment services are provided by the vocational worker, who works and interacts with the client in the community. In addition, the IPS vocational worker provides his or her client with all phases of employment services, from job development when the client first comes into the agency to job support when they become stable in a job placement. Conversely, in the DPA model, clients are served by different members of the team, including case managers, work crew supervisors, and vocational workers, depending on which phase of employment the client is in (e.g. group placement versus competitive employment). While DPA clients receive time unlimited job support from their designated case managers, once they are stable in a job position,

this individualized follow along support is reduced and may increase again only if employment problems arise or it is deemed necessary by the client and team members. Job support is instead emphasized through weekly peer employment groups.

IPS & DPA Working Alliance Rationale Summary

While DPA offers support from a broad array of different employment team members at varying phases of services and the opportunity for enhanced peer support through consumer employment groups, the opportunity to form a strong alliance with any particular vocational worker may be limited. Literature has shown that as compared to the general population, people with SMI require a greater length of time to form new interpersonal relationships with service providers with whom they have never worked before. Specifically, clients with SMI may require as long as six months to develop such relationships compared to a development period of a few weeks in the general population (Howgego et al., 2003; Frank & Gunderson, 1990), and interrupting this relationship as transitions in employment levels (i.e. prevocational activities to individual placement) occur may be damaging to the continuity of the emotional bond formation between the vocational worker and client.

Given the preceding rationale, the following hypotheses are presented.

Hypotheses 5-6

H5: Clients in the IPS group will have a stronger working alliance with their vocational workers as measured at the first time period in which they are working in paid employment (first working alliance) than clients in the DPA group.

H6: Clients in the IPS group will have a stronger working alliance as averaged across the 24-month study period than clients in the DPA group.

This study also looked more closely at the program models and specifically, the consistency of the vocational workers throughout the study in an exploratory fashion. It was expected that IPS vocational workers would remain consistent across time periods, per the tenets of the program model, whereas vocational workers named in the DPA

condition would be less consistent, per the tenets of its program model, in which a team of people work with the client in employment activities.

Potential Confounds

Key confounds exist that necessitated further investigation in the current study. Specifically, employment history has been shown to exert an effect on vocational outcomes in employment programs. For example, Burke-Miller et al. (2006) found that previous work history was associated with the employment outcomes in a sample of clients with SMI, such that those participants who had worked in the past 5 years were more likely to work competitively and work 40 hours in a month during the study. Results from a study by Thompson et al. (1995) were consistent with the previous findings, with the researchers concluding that work history is an important factor to consider when investigating success in vocational rehabilitation. However, Michon, van Weeghel, Kroon, and Schene (2005) published a recent review of literature finding mixed results pertaining to the relationship between work history and employment outcomes in vocational rehabilitation programs for the severely mentally ill. Due to the implications drawn from these studies and others like them, researchers routinely control for prior work history when addressing employment outcomes when this variable is not a main focus of the investigation (i.e. Razzano et al., 2005).

A second important confounding variable to consider is symptomatology. Research has illustrated that the type and severity of symptoms affects the ability to work for people with SMI. For example, Razzano et al. (2005) found that negative psychiatric symptoms and recent hospitalizations were associated with an inability to gain competitive employment and the inability to work 40 or more hours per week. McGurk and Mueser (2004) posited similar conclusions in that negative symptoms have an adverse impact on supported employment outcomes for people with severe mental illness. Michon et al. (2005) also found that severity of psychiatric symptoms is related to employment outcomes for clients in vocational rehabilitation programs, but to a lesser degree than other predictors (i.e. work performance). Qualitative research has shown that clients themselves are concerned over the impact of changing symptoms on their ability

to work (Marwaha & Johnson, 2005). Because of findings such as these, symptomatology has been frequently controlled for in prior studies and was investigated in relation to job outcomes in the current study.

In addition, other potential confounds exist that are external to the vocational worker-client relationship, including site location (unemployment rate) and type of employment program. The study was conducted at Thresholds North and Thresholds South (see below) located on the north and south sides of Chicago and because the south side had a much higher unemployment rate during the two-year study period than did the north side (South–12.15% versus North–5.34%), employment rates for participants in the study were affected. In regards to the employment programs utilized, significant philosophical and programmatic differences are apparent that may have affected employment outcomes. Specifically, because DPA emphasizes any type of paid employment (not simply limited to competitive employment), in contrast to the IPS model that emphasizes paid employment *only in the form of competitive employment*, overall paid employment outcomes may have differed between the groups. Finally, in regards to staff turnover, it should be noted that there was a significant amount of vocational worker turnover in the IPS condition during the first year of the study that may have affected job outcomes due to an interruption in the continuity of service provision, although this was not statistically investigated as a potential confounding variable.

METHOD

Research Context

The current study is a secondary analysis of data from a randomized controlled trial examining two-year outcomes for clients enrolled in a psychiatric rehabilitation center. The original study, conducted between 1999 and 2004, was longitudinal in design and compared IPS and DPA in terms of employment outcomes, such as job tenure and job satisfaction, non-employment outcomes, such as quality of life, composition and quality of social networks, service utilization, and symptoms. The study also included an investigation of program fidelity and program retention rates. A more complete description of the study is provided elsewhere (Bond et al., under review).

Overall Design

The parent study was conducted at an urban psychiatric rehabilitation program, Thresholds, at two day program sites. The parent sample consisted of 187 participants with SMI who were mostly new admissions to Thresholds. Case managers encouraged new clients who were interested in working to attend two informational sessions about the study led by the research team. Clients then provided informed consent to participate in the study, completed a baseline interview, and were randomly assigned to one of the vocational programs—IPS or DPA. At that time, participants began receiving employment services per the tenets of the program model and were followed for two years regardless of employment status. Objective data pertaining to the main dependent variable, paid employment outcomes, were collected via participant interview quarterly throughout the study period. Data pertaining to the predictor variable, working alliance, were collected via participant interview at 6-month intervals (6, 12, 18, & 24 months) for clients *actively working* in paid employment at that time.

Setting

Thresholds is a large psychiatric rehabilitation agency in Chicago, Illinois. It has a staff of over 700 that provide a full array of services, including employment services, residential services, medication management, case management, and day programming. Thresholds serves over 2000 “members” (e.g. clients) per year, with 800 participating in employment services, resulting in over 1000 job placements. Thresholds has two large sites that provide day programming, Thresholds North and Thresholds South, located in those respective parts of the city.

Sampling

Participants of the parent study were clients over the age of 18 who met the state of Illinois’s criteria for SMI, most of whom were newly admitted to one of the two Thresholds sites located on the north and south sides of Chicago to participate in their day program. Participants also included other current Thresholds clients who had not received DPA employment services from the agency in the last three months. Other inclusion criteria consisted of an interest in working and a goal of paid employment, attendance to two of the weekly informational sessions about the study, a minimum of 30 days receiving Thresholds services, an absence of competitive employment within the past 90 days, no physical illness that would prevent participation throughout the two years of the study data collection period, client agreement to be excluded from being provided services from the nonassigned vocational program for the duration of the study (2 years), and the willingness to give informed consent to participate in the study. During the 24-month enrollment period, 400 clients were newly admitted to Thresholds and 296 attended informational sessions about the original study. Two hundred participants were then randomly assigned to the DPA and IPS groups within site (Thresholds North and Thresholds South), with stratified assignment done on the basis of work history (greater than one year of work experience prior to admission to Thresholds versus less than one year of work experience). The final sample in the parent study consisted of 92 participants in the IPS condition and 95 participants in the DPA condition.

In total, 139 participants worked in paid employment at some point during the two year parent study. However, the current study had a reduced total sample size of 91 participants (N=45 in the DPA condition; N=46 in the IPS condition) pertaining to the primary hypotheses. The exclusion of 48 participants in the current sample is due to three factors. First, some clients were not working in paid employment at semi-annual interviews when working alliance data was collected. Secondly, some working clients failed to answer questions regarding the working alliance with their vocational worker at the semi-annual interviews. Finally, cases with missing data pertaining to the working alliance were excluded.

Procedures

Vocational Worker Characteristics

Study participants received employment services from vocational workers within the two models; IPS staff members were new hires for the purpose of the study and DPA staff were current employees of Thresholds. In the DPA condition, all vocational workers had at least a bachelor's degree and were supervised by senior rehabilitation staff. In the IPS condition, the team included a supervisor and three vocational workers at North and a supervisor and two vocational workers at South. All vocational workers had at least a bachelor's degree and past experience working with persons with mental illness and were supervised by a master's level rehabilitation professional.

Vocational Worker Training

In the IPS condition, the vocational workers received orientation and were trained on the implementation of the new employment model at the two sites (North and South). Specifically, IPS workers underwent an off-site three-day training including a one day job shadow at an established IPS model site, and received ongoing training and support from IPS specialists throughout the period of the study. In the DPA condition, vocational workers had long been implementing the employment model prior to the study, so no additional training was provided.

Model Implementation

Participants in both the IPS and DPA conditions were eligible for the complete array of Thresholds nonvocational services, including residential services, case management, medication management, and day programming. Further, the IPS teams were housed in a separate office space from DPA components, in order to protect against between treatment diffusion.

After randomization, participants in the DPA group were assigned a case manager who provided services throughout the duration of the study. At this time, participants usually began a period of prevocational assessment activities in the form of a prevocational work crew supervised by a Thresholds staff member. Once participants reached the level of satisfactory prevocational performance, they were offered a variety of placements, such as a position working at an agency run business or an individual placement, in which they received support from a job coach. Participants seeking independent competitive employment received job development assistance from Thresholds staff and were served by job support team members (i.e. case manager, job coach) while in their community placement. *See section in Introduction for further description of DPA.*

Subsequent to random assignment, participants in the IPS condition were assigned a case manager at their respective site (Thresholds North or Thresholds South). Per the tenets of IPS, participants were encouraged to pursue competitive employment and a rapid, individualized job search began immediately. Once the client obtained a community job, indefinite, ongoing follow along support was provided by the vocational worker. Overall, IPS vocational workers spent the majority of their time in direct service provisions working with clients in the community. Specifically, approximately 50% of their time was spent in job development and job support with the other half of their time spent on various employment related activities, such as collaboration with team members.

Model Fidelity Assessment

To address validity issues and determine whether the models were implemented correctly, fidelity or the adherence to the principles and practices of both programs model

was measured in the parent study at approximately 6-month intervals (Koop et al., 2004; Bond, Becker, Drake, & Vogler, 1997).

Data Collection

All study interviewers received the same initial training and supervision from the project coordinator, including interview observation and ratings to check interrater reliability. In addition, weekly phone calls were also made to monitor on-going interviewer performance. At the start of the study, all participants underwent a baseline interview in which information pertaining to demographic and clinical history, diagnosis, preference for vocational services, job preferences, employment history, and income status was collected. Participants were paid \$15 for this interview. Participants then completed a job satisfaction checklist two weeks after a job start. Participants in the parent study also underwent brief (15 minute) quarterly interviews either at their home or at Thresholds, in which data pertaining to vocational activities, hours worked, wages, and job satisfaction were collected. If participants could not be located or were unable to participate in this interview for any reason (i.e. incarcerated), attempts were made to locate them through significant others. When necessary, interviews were conducted by telephone, or at the soonest possible time once they became available for a face-to-face interview. Participants were paid \$5 for this short interview. Semi-annual interviews (6, 12, 18, 24 months) were lengthier than monthly interviews (75 minutes), collecting data pertaining to the working alliance, current symptoms, social networks, quality of life, substance abuse, finances, entitlements (i.e. Social Security), and insurance. Participants were paid \$15 for these interviews.

Measures

Background Characteristics

As displayed in Table 1, background characteristics that were reported in this study include several demographic variables (age, race, sex, ethnic/racial group classification, marital status, educational history, current residence), which were measured by the Uniform Client Data Inventory (Tessler & Goldman, 1982). Diagnosis,

as measured by the Structured Clinical Interview for DSM-IV (First, Spitzer, & Gibbon, et al., 1994), and work history and sources of income (i.e. entitlements), as measured by the Employment and Income Review (Center for Psychiatric Rehabilitation, 1989), were also obtained. Further, all of these measures display adequate reliability and validity for use in the population of interest.

Working Alliance Measure

Because no standardized measure of the working alliance was used in the parent study, this working alliance measure was developed for the current study after data collection. Originally, this group of items was part of a slightly larger pool of items that were used broadly to help characterize the client's social network. Furthermore, the process of narrowing the items to create the current scale was performed by taking into account Bordin's theory (1979) and research illustrating the item's relationship with the working alliance in related fields (e.g. case management). As displayed in Table 2 and Table 3, the scale is made up of a composite of items that address both the practical support components of the relationship, as well as the emotional bond components of the relationship, and include, the degree of perceived emotional support, the degree of perceived instrumental/informational support, the frequency of contact between client and vocational worker, the frequency of performance feedback provided to the client by the vocational worker, the stressfulness of the relationship, how critical the vocational worker is of the client, and the client's overall satisfaction with the relationship. These items were measured on a 5-point Likert-type scale with higher scores indicating a greater degree of the variable. For example, a score of a 5 on the overall satisfaction with the relationship item represents "very satisfied." Further, it is also important to note that the working alliance as conceptualized in this study represents the strongest relationship between clients and vocational workers, as clients were asked to name any vocational worker(s) they wished during semi-annual interviews, and were not requested to report on the working alliance with any particular service provider.

In regards to the items on the working alliance measure, it must also be mentioned that while the emotional components seem to map onto the bond facet of Bordin's

working alliance framework and some literature supports the role of the practical components of the working alliance as conceptualized in the current study, these components are not a *perfect* fit with Bordin's theory. For instance, while frequency of contact has been positively associated with the strength of the working alliance in past studies, it may be that contact between clients and service providers is necessary for the formation of a relationship, but is not in itself a part of the relationship conceptualized as collaboration and contribution in tasks, bonds, and goals. In addition, while feedback seems to be an important contribution to the alliance by the therapist/service provider as supported by some prior research, this component was not specifically addressed by Bordin's working alliance measure. These examples raise some of the issues faced when applying a conceptualization of the working alliance originally developed for the therapeutic setting to employment settings that involve different and perhaps more pragmatic activities, such as meetings on the job site between clients and vocational workers and onsite training, in contrast with in therapy activities that involve a more controlled setting (i.e. weekly meetings at the therapist's office) and are perhaps less pragmatic. Outcomes associated with the working alliance also differ according to setting; for instance, in therapy settings, outcomes may be associated with a reduction of psychiatric symptoms, whereas in employment and other rehabilitation realms, outcomes involve directly measurable entities such as time spent in a job and employment versus unemployment.

Overall Satisfaction with Services

Overall satisfaction with vocational services was measured through two questions: (1) "How do you feel about the vocational services you have been getting since entering the program?" and (2) "How satisfied are you with how this program has supported you in achieving your job goals?" These items were measured on a 1 to 7 scale, ranging from 1, indicating "terrible," to 7, indicating "delighted." This information was gathered during semi-annual interviews, at 6, 12, 18, and 24 month periods.

Employment Outcomes.

The outcome measures used in this study were the total duration of paid employment (as measured in days) across the two-year study period and the mean tenure of a paid job (as measured in days) across the two-year study period. Paid employment in this study is referring to work done in (1) competitive employment and (2) individual placements in the community, as well as work performed in an (3) agency run business, a (4) group placement, or (5) sheltered work.

These employment outcomes were chosen because they were standard measures that have been used in past studies and meta-analyses designed to evaluate employment programs (Twamley et al., 2003). The current study focused on paid employment outcomes rather than competitive employment outcomes because both vocational models, IPS and DPA, encompassed paid employment, whereas only IPS aimed solely at competitive employment and the working alliance likely affects paid employment in the same way as competitive employment.

Statistical Design

The data analysis described below was performed in two phases; the first was aimed at investigating the ad hoc measure of the working alliance presented and included an investigation of reliability, including internal consistency and stability across time (6, 12, 18, and 24 months), as well as a validity check, including the association between average scores of the working alliance across the study and average scores of overall satisfaction with employment services. Concerning the validity check, it is plausible that clients who perceived a strong, positive relationship or alliance with the individual with whom they have the most contact from the employment division of services, their vocational worker, were also satisfied with overall supported employment services. Secondly, the current sample was compared with the parent sample on important demographic and work history variables. Finally, preliminary analyses addressed the effects of confounding variables on employment outcomes and explored the relationship between predictor variables.

The second part of the data analysis tested the hypotheses and investigated the predictive relationship between the working alliance and employment outcomes, using univariate analyses and the technique of multiple regression, as well as the differences between IPS and DPA on the working alliance through a series of t-tests.

Power Analysis

Previous research addressing the working relationship in vocational rehabilitation has found medium effect sizes (“medium” according to the standards set by Cohen, 1992) for significant between group differences (employed versus unemployed) across disability groups, including severe mental illness (Donnell, Strauser, & Lustig, 2004; Strauser, Lustig, & Donnell, 2004; Lustig, Strauser, Rice, & Rucker, 2002). Therapy research (Horvath & Luborsky, 1993) and other rehabilitation literature have found modest effect sizes for between and within group differences addressing the working alliance. Therefore, this study expected to find small to medium effect sizes for correlational and multiple regression analyses, and according to Gpower (Faul & Erdfelder, 1992), with a preset alpha level of .05, three predictor variables, and a total sample size of 91 for within group comparisons, the estimated power is approximately 0.50 to 0.80 for Hypotheses 1-4. In regards to Hypotheses 5-6 which compared IPS and DPA on the working alliance through t-test analyses, small effect sizes were expected ($d=.20$), due to the speculative nature of this hypothesis and the lack of prior research in this area. According to Lipsey’s power chart (1990), with a sample size of 46 in IPS and 45 in DPA, and a preset alpha of .10 (to control for Type II error), power is approximately 0.25.

Data Analysis

Data were analyzed using “SPSS 14.0.” Participants were tracked across time (24 months) using pre-determined identification numbers. Both within group and between group analyses were performed with the overall study alpha level set at .05. All analyses were two-tailed to account for results that conflicted with the *a priori* hypotheses set forth.

During the parent study, the data were double entered to ensure accuracy. In the current study, scores were assessed for extreme outliers (more than two standard deviations above the mean) and deleted when the normality of the distributions was violated. Two cases on the variable number of weeks at longest paid job in the five years prior to the study (confounding variable) were deleted from analyses involving this variable (pairwise) because they were more than two standard deviations above the mean. Scores were investigated for clerical errors and were deleted from further analysis. One potential confounding variable, the number of weeks the client knew the vocational worker contained many clerical errors. Specifically, the majority of cases reflected that the client have known the vocational worker for an improbable amount of time (e.g. 5 to 7 years) and therefore, this variable was excluded. Regarding the working alliance measure, negatively-worded items (how critical the vocational worker is of the client; the stressfulness of the relationship) were reverse coded, so that a higher score would reflect a stronger relationship, in agreement with the positive items on the scale.

Preliminary Analyses—Part One

Exploratory

Descriptive statistics including frequency distributions, histograms, scatterplot matrices, homogeneity tests, and residual plots were produced to characterize the data and evaluate adherence to the assumptions of the parametric tests, especially in regards to the assumptions of multicollinearity, homoscedasticity, and linearity between the predictor and outcome variables in multiple regression, and normality of distributions and homogeneity of variance in regards to the t-test for independent means. Because these important assumptions were not violated, the use of non-parametric tests was not considered. Exploratory analyses were also used to identify missing data pertaining to the working alliance. Participants who filled out at least five out of seven of the items on the working alliance measure were retained and the one or two missing items were be approximated using mean substitution, based on the mean of the five completed item responses. If three or more of the items (out of seven) on the scale were missing, the case

was excluded from further data analysis. One participant was excluded from the sample due to missing data on the working alliance measure and mean substitution was used in the case of one participant in which a response to one item on the survey was missing. In regards to the overall satisfaction with services questionnaires, only complete data in which both of the questions on the questionnaire were answered were used in the data analysis.

Reliability

The seven items that were selected to measure the working alliance based on theory and prior research were investigated to determine if they were an internally consistent scale. The item totals were summed to create a composite score and Cronbach's alpha was calculated. Inspection of inter-item correlations and item-total correlations was then conducted and the final scale was formed by discarding any items that substantially improved the alpha when deleted (alpha improvement of .05 or greater). The measure of the working alliance's stability across time (6, 12, 18, 24 months) and test-retest reliability was also addressed through a series of pairwise t-tests. Univariate correlational analyses were then run to investigate any systematic change across time. While research has shown that the working alliance remains fairly stable over time, this area has been seldom studied in rehabilitation and there were, no *a priori* hypotheses.

Validity

The quality of the working alliance between the client and the vocational worker across the four data collection periods was averaged and correlated with scores of satisfaction with overall services averaged across time using simple Pearson correlations to determine the degree of criterion related (concurrent) validity. The criterion for good validity is considered to be an r greater than or equal to .40 and the criteria for adequate validity is considered to be an r value with a corresponding significant p -value ($p < .05$).

Potential Confounds

Work history and symptom severity were examined as potential confounds by calculating Pearson correlations with the two employment outcome measures in order to

determine if these variables had a significant effect on the duration of time clients spent in paid employment, as past research suggests. Site location and condition were also considered, and independent groups t-tests were performed for each variable to determine if differences existed between (1) Thresholds North and Thresholds South on paid employment outcomes and between (2) IPS and DPA on paid employment outcomes. Furthermore, the confounds that were significantly associated with the dependent variables of job outcomes were controlled for in the main analyses.

Descriptive Data

Background characteristics including the demographic information pertaining to age, gender, ethnic/racial group identification, marital status, education, as well as work history and diagnosis were analyzed to characterize the sample and determine the degree of representativeness. The current sample was also compared with the parent sample and those participants from the parent sample who worked in paid employment during the 2 year study period on baseline characteristics. For continuous demographic variables, including age and the number of weeks worked in prior paid employment t-tests for independent means were used. The samples also were compared on the demographic nominal variables, including site, employment group, gender, race, diagnosis, education, and at least 12 months of prior competitive employment utilizing chi square analyses. Finally, correlations between the continuous predictor variables identified for inclusion in the multiple regression analyses were examined to determine if linear associations existed between these variables. Independent groups t-tests were then performed to determine if first working alliance scores and average working alliance scores differ according to the dichotomous predictor variables used in multiple regression analyses.

Hypothesis Testing—Part Two

Hypotheses 1-4

The effects of the predictor variables, the first working alliance score and the average of working alliance scores across the study on the dependent variables of job

outcomes, including (1) the total duration of paid employment in days and (2) the mean paid job tenure in days, were first investigated through Pearson correlations and then through four linear regression models with sequential entry of the predictor variables (hierarchical multiple regression). Confounding variables that showed a significant relationship with job outcomes in preliminary analyses were controlled for in the multiple regression analyses (See “Results” section). Specifically, confounds were entered into the regression model at step 1, prior to the main predictor variable, the strength of the working alliance, which was entered at step 2 of the regression model.

Hypotheses 5-6

The difference between the two groups, IPS and DPA, on the measure of the first working alliance and the average of working alliance scores across time were analyzed through two t-tests for independent means (one for each dependent variable).

Supplementary Analyses

First, in order to better understand the factor structure of the working alliance measure, exploratory factor analysis was performed utilizing varimax rotation and the extraction method of principal component analysis. Factors to retain were determined by investigating eigenvalues (retaining factors with eigenvalues greater than 1.0), the bend of the scree plot, as well as a secondary investigation of communalities and residuals. Items with a factor loading of .60 or above on a factor were retained and considered a facet of the factor. Pearson correlations were then performed to investigate the relationship between individual items on the working alliance measure and paid employment outcomes, as well as the relationship between working alliance factors identified in EFA results and outcome variables. Working alliance factors and working alliance items were then investigated in relation to employment groups, and independent group t-tests were performed to determine if differences exist between IPS and DPA on these variables. Additional supplementary analyses were then run to determine the consistency of vocational workers named across employment groups. Frequency distributions and percentages were produced to characterize the extent to which

participants had only one working alliance observation across the study, those who named the same vocational worker and reported on the working alliance with that service provider across the study, those who reported on the working alliance with the same *pattern* of vocational workers across the study (for those participants who named more than one vocational worker at the same semi-annual follow-up period), and those who named and reported on the working alliance with one or more different vocational workers across the study. Finally, missing data analyses were performed. The total number of clients obtaining paid work was compared with the total number of participants reporting on the working alliance at semi-annual time periods and frequency distributions and percentages were produced to characterize the missing data. In addition, nonresponders (participants who did not report on the working alliance at any semi-annual time periods at which they were working in paid employment), partial responders (participants who reported on the working alliance at some but not all of the semi-annual time periods at which they were working in paid employment), and complete responders (participants who reported on the working alliance at all semi-annual time periods at which they were working in paid employment) were compared on paid employment outcomes using a one-way analysis of variance (ANOVA). Finally, partial responders and complete responders were compared on first working alliance scores and average working alliance scores using two t-tests for independent means.

RESULTS

Of the 187 participants in the parent study, 91 (48.7%) were included in the current study and 96 (51.3%) were excluded from the study for reasons including the lack of paid employment across the study (n=48), the lack of paid employment at the time of semi-annual interviews when the WA was measured (n=32), the failure to report on the WA during semi-annual interviews (n=15), and missing data on three or more items of the WA measure (n=1). The included sample of 91 did not differ from the excluded sample of 96 in regards to gender, $\chi^2(1)=1.26$, race, $\chi^2(2)=2.97$, diagnosis, $\chi^2(4)=4.70$, education, $\chi^2(3)=7.74$, employment group, $\chi^2(1)=.78$, study site, $\chi^2(1)=2.04$, work history variables, including at least 12 months of prior competitive employment, $\chi^2(1)=2.14$, and the number of weeks in past paid job, $t(154)=.65$, or age, $t(186)=.31$. The current sample of 91 also did not differ from the excluded sample who obtained paid employment during the two-year study period at some point (N=48), in regards to gender, $\chi^2(1)=.70$, race, $\chi^2(2)=2.16$, diagnosis, $\chi^2(4)=6.25$, education, $\chi^2(2)=3.42$, employment group, $\chi^2(1)=.004$, study site, $\chi^2(1)=.91$, work history variables, including at least 12 months of prior competitive employment, $\chi^2(1)=.73$, and the number of weeks in past paid job, $t(109)=.12$, or age, $t(139)=-1.54$. Furthermore, of those participants included in the current sample, 49 (53.8%) completed their first WA scale at 6 months, 20 (22.0%) completed their first WA scale at 12 months, 15 (16.5%) completed their first working alliance at 18 months, and 7 (7.7%) completed their first working alliance at 24 months. These data illustrate that 69 (75.8%) participants who reported on the working alliance with their vocational workers did so at one or both of the first two semi-annual interviews, indicating that the majority of participants in the current study had obtained their first paid job within 12 months.

Sample Descriptive Statistics

As displayed in Table 4, demographic data indicate that of the sample of 91 participants, the majority received employment services at Thresholds North (73.6%), two-thirds were male, approximately 86% white and African American, heterogeneous in regards to diagnosis, with the approximately half with a schizophrenia spectrum disorder and remainder with a mood disorder. Participants had a mean age of 38.9 years, most participants had a high school education or above (89%), and the majority had never been married (83.5%). Work history data indicate that the majority of participants worked in a paid job prior to study admission (n=74, 81.3%), and 23 out of 91 participants, or 25.3% had worked in prior competitive employment for at least 12 months. Moreover, IPS and DPA participants did not significantly differ according to gender, race, age, psychiatric diagnosis, past paid employment, or past competitive employment.

Item Level Analyses

Internal Consistency and Inter-item Correlations

The first step in constructing the working alliance scale was examining the internal consistency of the 7 original items, which yielded an alpha of .65. Item-total correlation statistics indicated that if the frequency of contact item was deleted, the alpha would rise to .71 and because this is a substantial improvement, the frequency item was excluded from further analyses. However, this internal consistency statistic falls slightly below the standard of .80 for adequate reliability of a measure. Furthermore, as displayed in Table 5, inter-item correlations for the original seven items partially support the proposed fit between this working alliance measure and Bordin's conceptualization of the working alliance, as divided into two dimensions—emotional and practical. Specifically, it was expected that the emotional components of emotional support, criticalness, stressfulness, and overall satisfaction would strongly and significantly correlate with one another and the practical components of instrumental support, feedback, and frequency of contact would strongly and significantly correlate with one another. As expected, the practical components of feedback and instrumental support

correlated strongly and positively with one another ($r=.791$) and the emotional component items of emotional support and overall satisfaction correlated significantly with one another ($r=.467$) as well as a significant positive correlation between emotional component items criticalness and stressfulness ($r=.285$). However, contrary to expectations, the emotional component items of criticalness and stressfulness were not significantly correlated with the other emotional component items of emotional support and overall satisfaction. Consistent with the finding that removing the frequency of contact item increased the internal consistency of the scale, this item did not significantly correlate with any other items or the working alliance total. Further, other noteworthy findings included a significant and positive correlation between instrumental support and emotional support ($r=.505$), emotional support and feedback ($r=.483$), and between overall satisfaction and all of the other retained items.

Working Alliance Item Descriptives

Scores on WA items ranged from 1 to 5, and as displayed in Table 5, the item means were generally high and all fell within the positive range on the scale (above 3), ranging from 4.46 for overall satisfaction with the relationship to 3.73 for instrumental support and feedback. Of note, the majority of participants reported high overall satisfaction with their relationship with their vocational worker, as this item has a high mean and shows little variability ($SD=.84$). Consistent with this finding, participants reported low levels of criticalness and stressfulness characterizing their relationship with their vocational worker, as these items (after reverse coding) have a high mean (mean=4.42 and mean=4.57 respectively) and the lowest variability of all items ($SD=.72$, $SD=.67$). Feedback from vocational workers to clients and instrumental support were the lowest rated items (mean=3.73 for both), although these items showed the greatest variability amongst all items ($SD=1.24$, $SD=1.28$ respectively).

Working Alliance Total Descriptives

The possible range of working alliance total scores goes from 6 (a score of “1” on all six items), representing the worse measured relationship between clients and

vocational workers, to 30 (a score of “5” on all six items) representing the strongest possible measured relationship between clients and service providers. Scores of 15 to 20 indicate a positive relationship between clients and vocational workers; scores between 20 and 25 represent a strong relationship and scores between 25 and 30 represent a very strong working alliance. The mean for first working alliance score was similar to the mean for the average working alliance scores for all time periods (mean=25.03 and mean=24.70 respectively) and both measures show similar variability (SD=3.73 and 3.43 respectively). Consistent with generally high individual item means, the distribution of total scores indicates that most participants had a strong to very strong working alliance with their vocational workers across the study.

Stability Across Time

In regards to the stability of the working alliance over time, zero-order correlations between working alliance time periods ranged from .420 to .770 and were significant ($p < .05$), as displayed in Table 6, providing support for the test-retest reliability of the measure. Also as displayed in Table 6, pairwise t-tests between successive time periods yielded nonsignificant t values, also indicating that the working alliance scores did not systematically increase or decrease over time.

Criterion-related Validity

As displayed in Table 7, the first working alliance scores and average of working alliance scores significantly correlated with feelings about vocational services and satisfaction with the vocational program in meeting job goals, with correlation coefficients ranging from .392 to .442 ($p < .05$), providing some evidence for the criterion-related validity of the working alliance measure.

Descriptive Statistics for Two-year Employment Outcomes

Descriptive data characterizing paid employment outcomes are displayed in Table 8. Participants had great variability in employment outcomes across the two-year study period with a mean of 414.5 days characterizing total duration of paid employment

(standard deviation=211.41) with a range of 697 days. On average, participants had a tenure of 289.90 days in any one paid job (standard deviation=218.86) with a range of 693.30 days.

Potential Confounds

Work history and baseline symptoms were examined for their association with employment outcomes to determine whether they should be treated as confounding variables in the main hypothesis testing. As shown in Tables 8 and 9, four of the nine background variables examined in regards to work history, measures of symptom severity, and employment program (IPS/DPA) were linked with individual employment outcomes. Moreover, confounding variables that were found to significantly relate to employment outcomes were statistically controlled for in multiple regression analyses in regards to Hypotheses 1-4, as described in the “Hypotheses” section.

As displayed in Table 8, participants in the DPA group had a significantly greater total duration in paid employment across the two-year study period than did participants in IPS, $t(89)=-2.27, p=.025$. Total duration of paid employment did not significantly differ according to study site, participation/lack of participation in at least 12 months of prior competitive employment, or the participation/lack of participation in paid employment in the five years preceding the study. Mean job tenure across jobs differed according to prior participation in competitive employment, such that participants who had worked in prior competitive employment for at least 12 months averaged a significantly longer duration per paid job during the two-year study period compared to those who had not, $t(59.25)= -3.68, p=.001$. Mean job tenure did not significantly differ according to study condition, study site, or participation/lack of participation in paid employment in the five years prior to the study.

As displayed in Table 9, the number of weeks at longest paid job in the 5-year period prior to study admission was associated with total duration of paid employment ($r=.261, p<.05$), whereas the variables of sum of paid weeks worked in last five years at the time of the baseline interview and symptom severity measures (PANSS total score, PANSS positive factor, PANSS negative factor) did not significantly correlate with this

outcome variable. In regards to the mean job tenure, only PANSS total score correlated significantly with this outcome variable ($r=-.284$, $p<.05$), whereas the other possible confounding variables of work history (number of weeks at longest paid job in the past five years), employment group, and study site did not significantly correlate with this outcome variable.

Relationships Between Predictor Variables

As shown in Table 10, number of weeks at longest paid job, PANSS total score, first working alliance scores, and working alliance average scores were not significantly associated with each other. Also as shown in Table 10, the Thresholds North and South samples did not differ on working alliance, nor did participants who had been employed in at least 12 months of competitive employment prior to the study as compared with those who had not.

Hypotheses

H1: First Working Alliance and Total Duration of Paid Employment

The relationship between first working alliance scores and the total duration of paid employment in days was first examined using a Pearson correlation without controlling for confounding variables. The results indicate that first working alliance scores and this employment outcome were not significantly correlated, $r=-.138$. To test for the association between first working alliance and total duration of paid employment in days at follow-up, the confounding variables of employment group and the number of weeks at the longest paid job prior to the study were entered first in a stepwise multiple regression. As shown in Table 11, the overall regression model was significant, $F(3,84)=4.24$, $p=.008$ and accounted for 13.6% of the variance in this outcome variable. However, Hypothesis 1 was not confirmed, as first working alliance scores did not significantly contribute to the model explaining total duration of paid employment in days, ($\beta=-.130$; $t=-1.21$, $p=.230$).

H2: First Working Alliance and Mean Paid Job Tenure

The relationship between first working alliance scores and the mean job tenure in days was first examined using a Pearson correlation without controlling for confounding variables, and results indicate that first working alliance scores and this employment outcome are not significantly correlated, $r = -.102$. To test for the association between first working alliance and the mean paid job tenure after 24 months, the confounding variable of symptom severity (PANSS total score) and at least 12 months of prior competitive employment were entered first in a stepwise multiple regression. As shown in Table 11, results indicate that the model of predictor variables significantly predicted mean job tenure in days, $F(3, 87) = 5.20$, $p = .002$ and accounted for 15.2% of the variance in this outcome variable. However, the hypothesis was not confirmed, as first working alliance scores did not significantly contribute to the model explaining mean job tenure ($\beta = -.133$; $t = -1.34$, $p = .184$).

H3: Average Working Alliance and Total Duration of Paid Employment

The relationship between average working alliance scores and the total duration of paid employment was first examined using a Pearson correlation without controlling for confounding variables, and results indicate that mean working alliance scores and this employment outcome are not significantly correlated, $r = -.149$. To test for the association between mean working alliance and the total duration of paid employment at follow-up, the confounding variables of employment group and the number of weeks at the longest paid job prior to the study were entered first in a stepwise multiple regression. As displayed in Table 11, results indicate that the model of predictors significantly predicted the total duration of paid employment, $F(3, 84) = 4.19$, $p = .008$ and accounted for 13.4% of the variance in this outcome variable. However, this hypothesis was not confirmed, as average working alliance scores did not significantly contribute to the model explaining the total duration of paid employment, ($\beta = -.124$; $t = -1.16$, $p = .249$).

H4: Average Working Alliance and Mean Paid Job Tenure

The relationship between average working alliance scores and the mean job tenure was first examined using a Pearson correlation without controlling for confounding variables, and results indicate that first working alliance scores and this employment outcome are not significantly correlated, $r=-.167$. To test for the association between mean working alliance scores and mean job tenure at the two-year follow-up, the confounding variables of symptom severity (PANSS total score) and at least 12 months of prior competitive employment were entered first in a stepwise multiple regression. As displayed in Table 11, results indicate that the model of predictors did significantly predict the mean job tenure, $F(3,87)=5.82$, $p=.001$ and accounted for 16.7% of the variance in this outcome variable. Results indicate that this hypothesis was not confirmed, as average working alliance scores did not significantly contribute to the model explaining mean job tenure, ($\beta=-.182$; $t=-1.84$, $p=.069$).

H5 & H6: IPS/DPA and Working Alliance

As displayed in Table 12, participants in the IPS and DPA groups significantly differed in first working alliance scores and average working alliance scores across the study. Specifically, IPS participants had a significantly higher mean first working alliance scores than DPA participants, $t(89)=2.21$, $p=.030$. Participants in the IPS condition also had a significantly higher mean average of working alliance scores across the study as compared to participants in the DPA condition, $t(89)=2.31$, $p=.023$. The differences between IPS and DPA participants on the first working alliance and average working alliance are characterized medium effect sizes ($d=.46$ and $d=.48$ respectively).

Supplementary Analyses

Exploratory Factor Analysis (EFA)

An EFA was conducted using an orthogonal rotation (varimax) and the extraction method of principal component analysis to further investigate the underlying factor structure of the WA measure. According to eigenvalue criteria (retain factors with

eigenvalues greater than 1.0), the results indicate that two factors should be retained. Factor 1 (eigenvalue=2.6) accounts for 37.0% of the variance in the data and is comprised of four items: emotional support, instrumental support, feedback, and overall satisfaction. The items load moderate to highly on this factor with factor loadings from the rotated matrix ranging from .66 to .88. Factor 2 (eigenvalue=1.4) accounts for 20.5% of the variance in the data and is comprised of the items of stressfulness and criticalness, which load moderately to highly on this factor, with factor loadings from the rotated matrix of .70 and .79 respectively. The frequency of contact item did not load on a retained factor. Further, the internal consistency alpha for Factor 1 was .80 and the alpha for Factor 2 was .44. Factors 1 and Factor 2 did not significantly correlate with one another, $r=.047$.

Working Alliance Factors, Working Alliance Items, and Employment Outcomes

Because of the lack of support for the hypotheses regarding the relationship between the working alliance and employment outcomes and to in order to further explore the role of working alliance items in relation to vocational outcomes, supplemental analyses on working alliance items and factors were performed. As shown in Table 13, results indicate that Factor 1 and Factor 2 did not significantly associate with the paid employment outcomes. However, the WA items instrumental support ($r=-.214$, $p=.041$) and feedback ($r=-.238$, $p=.023$) as provided by the vocational worker to the client averaged across the study were significantly negatively correlated with mean job tenure, whereas satisfaction, criticalness, stressfulness, and emotional support were not significantly correlated with this outcome variable. Instrumental support ($r=-.227$, $p=.030$) and feedback ($r=-.210$, $p=.041$) were also significantly related to the total duration of paid employment across the study, whereas satisfaction, criticalness, stressfulness, and emotional support also showed no significant relationship with this outcome variable. In other words, the greater the levels of instrumental support and feedback provided by the vocational worker to the client, the shorter tenure that was worked in any one paid job and the shorter the period of time spent in total paid employment across the two-year study period.

IPS & DPA: Working Alliance Factors and Working Alliance Items

To further elucidate the relationship between the working alliance and the vocational models implemented here given significant hypotheses findings, working alliance items and the two working alliance factors identified in the EFA results were investigated. Results indicate that IPS and DPA participants did not significantly differ in regards to Factor 1 scores (Factor 1 items: emotional support, instrumental support, feedback, overall satisfaction), $t(89)=1.81$ or Factor 2 scores (Factor 2 items: criticalness, stressfulness), $t(89)=1.85$. Item level results indicate the IPS and DPA members did not significantly differ in regards to WA items of emotional support, instrumental support, feedback, criticalness, and satisfaction. IPS and DPA participants did differ on the stressfulness item, specifically, client in the IPS group reported lower levels of stressfulness in regards to the relationship with their vocational worker, as compared with clients in the DPA group, $t(89)=2.11$, $p=.038$.

Vocational Worker Consistency

As displayed in Table 14, frequency data indicate that out of the 25 participants in the IPS group who had multiple working alliance scores across time, 17 named the same vocational worker, indicating a 68% consistency rate. (This figure excludes 21 participants who had only one working alliance observation across the study). Eight participants named different vocational workers across time periods and no participants named multiple vocational workers at the same time period. In the DPA condition, out of the 28 participants who had multiple working alliance scores across time, 14 named the same vocational worker at each time period, 2 named the same set of vocational workers at each time period when more than one vocational worker per time period was identified, and 12 named a different vocational worker across time periods, indicating a total of a 57% consistency rate. (This figure excludes 17 DPA participants who had only one working alliance observation across the study). Moreover, as displayed in Table 14, consistency in naming vocational workers and reporting on the working alliance, specifically, naming the same vocational worker or combination of vocational workers across working alliance observations versus naming different vocational workers across

working alliance observations did not significantly differ according to employment program, $\chi^2(1)=.663$.

Participants Who Did Not Name a Vocational Worker

As displayed in Table 15, missing data results indicate that a total of 15 out of 139 participants in the parent sample who had obtained paid employment at some point during the study failed to name a vocational worker and report on the working alliance at all semi-annual follow-up period(s) in which they were working in paid employment (nonresponders) and 24 participants in the current sample of 91 participants failed to name a vocational worker and report on the working alliance at least one time period in which they were working in paid employment (partial responders). In the current sample of 91, there were 67 participants who named a vocational worker and reported on the working alliance at every semi-annual time period at which they were working in paid employment (complete responders). Furthermore, partial responders did not differ from complete responders on first working alliance scores, $t(89)=.30$, or average working alliance scores across the study, $t(89)=.25$. The three groups of responders (complete responders, partial responders, nonresponders) differed on total duration in paid employment, $F(2,103)=3.15$, $p=.047$ and mean job tenure across jobs, $F(2,103)=3.71$, $p=.028$. Specifically, nonresponders had a significantly lower total duration in paid employment and mean job tenure across the study than did partial responders, $p<.05$, whereas complete responders did not significantly differ from partial responders or nonresponders on either employment outcome.

DISCUSSION

Working Alliance Measure

In regards to psychometric properties, the working alliance scale developed in the current study has evidence of adequate criterion-related validity, as it was associated with related outcomes—satisfaction and feelings about vocational services, although method variance is an issue because both variables were collected via participant interview. The working alliance measure also has adequate test-retest reliability, as the working alliance was stable across time, a finding that is consistent with those from therapy literature in which alliance scores remain stable over time when measured from the perspective of the client (Horvath & Luborsky, 1993). In regards to internal consistency, the current scale has an alpha coefficient of .71, which falls slightly below the standard for adequate internal consistency of .80. This finding may be a product of the small number of items on the scale (six) and it might possibly suggest that the items may be measuring different subdimensions. Moreover, item level analyses raise concern about the validity of the measure and indicate that not all of the items on the WA measure that were purported to measure the same subdimension of Bordin's conceptualization (see Table 3) were significantly associated with each other. For instance, as noted earlier, levels of vocational worker criticalness and stressfulness as perceived by the client were not associated with levels of emotional support, three items that were purported by this study to be a part of Bordin's "bond" dimension. Consistent with these findings, items that were purported to be facets of different working alliance dimensions were associated with one another. For example, instrumental support and emotional support were significantly and positively correlated with one another and overall satisfaction was significantly and positively correlated with the other five retained items on the working alliance measure, further challenging the theoretical framework of three distinct dimensions of the underlying the scale. And as noted previously, the eliminated item, frequency of contact

(purported to be a facet of the “practical” component of Bordin’s framework), was not associated with the other WA items and substantially lowered the internal consistency of the scale. It may be that while frequency of contact between vocational worker and client is important for the working alliance to form (i.e. one cannot form a relationship with someone with whom they have no contact), it is itself not a component of the construct. EFA results provided additional information in regards to the dimensionality of the scale, as two factors that are not consistent with the *a priori* dimensional expectations of the scale (see Table 3) were found. The first factor addressed the support component of the relationship consistent of activities of the vocational worker (emotional support, instrumental support, feedback) as well as overall satisfaction with the relationship. The second factor addressed the negative emotionality of the relationship, specifically, perceived degrees of criticalness and stressfulness characterizing the working alliance from the perspective of the client.

In summary, because many of the psychometric properties of this scale are promising (i.e. good adequate criterion-related validity and stability across time), the working alliance measure is deemed acceptable for use in this study to form substantive conclusions regarding the main hypotheses. However, because the scale items seem to be a loose fit with existing theory and the two dimensions found were not consistent with this framework (Bordin, 1979), the scale needs further revision, including the addition of more items and pilot testing before this tool should be used further in research or clinical settings. In addition, a closer investigation and revision of the underlying conceptualization of the working alliance moving beyond Bordin’s framework (1979) is also necessary to strengthen the measure.

Hypotheses Conclusions

In regards to the working alliance and employment outcomes, *a priori* hypotheses were not confirmed, as the working alliance had no relationship with the total duration of paid employment across the two-year study period and mean paid job tenure across jobs. These results are inconsistent with expectations, in which it was predicted that working alliance and employment outcomes would be positively related, commensurate with other

rehabilitation outcomes literature (e.g. case management), illustrating the beneficial impact of the working alliance on SMI client outcomes (e.g. Frank & Gunderson, 1990). While main analyses did not find a statistically significant relationship between working alliance total scores and employment outcomes, item level analyses found that the practical components of the working alliance—feedback and instrumental support were negatively associated with employment outcomes. Several possible explanations exist for this interesting finding. For instance, clients who are independent and stable on the job and have better job outcomes likely require little tangible assistance from vocational workers, perhaps accounting for the lower ratings of these items. Conversely, clients who have a more difficult time maintaining employment may require more practical support from vocational workers, leading to higher ratings on these items, but perhaps worse job outcomes. For instance, studies have found that clients with SMI who have poor executive functioning require more intensive supported employment services (McGurk, Mueser, Harvey, Marder, & LaPuglia, 2003) and that cognitive dysfunction can adversely affect employment status (McGurk & Mueser, 2003). Thus, clients with poor cognitive functioning may receive more practical support from vocational workers, yet when their deficits cannot be compensated for, negative employment outcomes result. Moreover, because the hypothesis testing results were statistically nonsignificant, future research is warranted to investigate whether a true negative relationship exists between the working alliance and employment outcomes, or whether a positive relationship exists that is consistent with the findings from past rehabilitation literature.

The lack of confirmatory findings in regards to these hypotheses further raises the issue of the validity of the conceptualization of the working alliance utilized in this study. Some past conceptualizations of the working alliance in rehabilitation settings have focused solely upon the emotional components or “bond” facets of the relationship. And while employment services involve tangible activities, the ways in which these tasks influence and integrate as a facet of the working alliance is not well understood at this point. Further, other conceptualizations of the working alliance also take into account the salience of goals (e.g. vocational worker understands client goals) and focus upon those aspects inherent to the classical formulation of the “therapeutic alliance” (e.g. client feels

as if the therapist listens to them; client feels as if the therapist considers the client's input as important). More commonly used measures of the working alliance also consider the role of the client as active in the therapy/rehabilitation process, rather than focusing solely upon the role of the therapist/vocational worker that is used in the current conceptualization (e.g. emotional, instrumental support from the vocational worker, feedback from the vocational worker). For example, Goldberg, Rollins, and McNary (2004) investigated a revised version of the Working Alliance Inventory (Horvath & Greenberg, 1989 as cited in Goldberg et al., 2004), a tool that was originally designed for therapy settings, in the context of vocational rehabilitation for people with SMI. This tool takes into account client goals as a collaboration between parties, as well as bonds, tasks, and the general alliance from both perspectives. A recent qualitative study interviewed clients with SMI and service providers in order to shed light on this issue and better understand the working alliance in rehabilitation settings. Findings reveal three major themes in regards to the working alliance, includes building and negotiating trust, which incorporates building the foundation for a relationship, predictors of a good relationship (e.g. consumer level of need), and choice and empowerment as important aspects of the relationship. The second theme that emerged was that of "I'm on your side," which includes service provider accessibility, knowing and understanding the client, emotional bond aspects (sharing, accepting, caring), and moving forward, or personal growth of the client. The final theme is "tools and strategies," which involves using problem solving approaches to deal with practical rehabilitation issues such as housing, and having a key person, or one service provider assigned to the client who is responsible for their well-being and the provision of comprehensive care (Kirsh & Tate, 2006). These interesting qualitative findings should serve as a foundation for future research and conceptualizations of the working alliance in rehabilitation, and specifically, in employment programs.

The *a priori* hypotheses set forth in regards to the working alliance and vocational programs in this study were supported by study findings. As expected, the working alliance did differ between employment groups as IPS participants had a stronger relationship with their employment specialists than did clients receiving DPA services,

although it should also be noted that most participants had a good working alliance with their vocational service providers. The significant differences found between IPS and DPA on both the first working alliance and average working alliance across the study were characterized by medium effect sizes (.46 and .48 respectively) according to standards set by Cohen (1992), suggesting that these findings may have *some* practical significance in the day to day provision of employment services for people with SMI, although further research is needed to substantiate this notion. At the factor and item level, it was found that while the employment groups do not differ in regards to either factor clustering of items (Factor 1: support components and satisfaction; Factor 2: negative emotionality), the working alliance between clients and vocational workers in the IPS group were characterized by less stressfulness across the study as compared with the DPA group, a finding that is also hallmarked by a medium effect size ($d=.45$).

Moreover, results also provide some evidence that the employment programs may have adhered to the tenets of their program models in regards to vocational worker consistency, as IPS participants largely reported on the working alliance, or the strongest relationship formed, with the same employment specialist across the study, as consistent with individualistic services, whereas DPA participants reported on the working alliance with a variety of different vocational workers a higher proportion of the time, a finding that is more consistent with the team approach (68% in IPS versus 50% in DPA, although the difference is not statistically significant). A plausible explanation for the findings of stronger working alliances for IPS participants would be that IPS allows for a stronger bond to be formed between client and vocational worker due to the one-on-one nature of services. In contrast, although DPA still evidenced a fairly high level of service continuity, the team approach may weaken the strength of the alliance that is formed between the client and any particular vocational worker. Yet, it is also important to note that while DPA participants evidenced weaker relationships with any one vocational worker, it is possible that DPA participants may have the opportunity to form *more* relationships (although of a different strength), as evidenced by the finding that some participants in the DPA group chose to report on the working alliance with multiple vocational workers at the same follow-up time period. Moreover, the findings that DPA

clients had poorer working alliances and more stressful relationships with their individual vocational workers is also consistent with the finding in the parent study in which DPA had a significantly higher participant dropout rate as compared to IPS; 17.7% of participants in IPS discontinued employment services at Thresholds versus 34.7% of participants in DPA during the first six months. Similarly, only 36.7% of participants were still receiving Thresholds services in the DPA group at the two-year follow-up, as compared with 55.2% of participants in the IPS group (Bond et al., in press).

Specifically, it is possible that weaker client/vocational worker alliances in DPA influenced the higher dropout rates. Finally, staff turnover in the two employment groups may also partially account for vocational worker consistency rates, especially for the IPS group. However, because all of these explanations are only speculations, working alliance differences between individual and team vocational approaches are an important area of future research, in order to replicate these findings and understand the precise nature of individual employment services versus team approaches that account for such differences. For instance, a future study designed to answer this question would utilize several employment programs at multiple sites utilizing team and individual approaches and follow clients longitudinally to measure the working alliance at various points in time. The use of several team and individual based employment programs will help corroborate and strengthen the nature of the results found in the current study, which only compares two vocational programs.

Study Limitations

The use of an ad hoc scale without established psychometric properties is a noteworthy limitation in the current study, especially because of its loose association with existing working alliance theory, as was previously noted. In addition, because the working alliance was not measured uniformly early on in the study, ambiguous temporal sequence is a problem because it is unclear whether the working alliance affected employment outcomes (i.e. greater levels of feedback led to poor employment outcomes) or whether employment outcomes affected working alliance scores (i.e. less instrumental support provided to clients who were more stable on the job with better employment

outcomes). Another limitation of the current study is the low statistical power that may partially account for the nonsignificant findings between the working alliance and employment outcomes. The current sample size is 91, which is below the standard of 150 (50 participants for every predictor variable) needed for adequate power with three predictor variables in multiple regression analyses, as set forth by some statisticians. Increasing the sample size in future studies would help solve this problem, especially when multiple predictors and covariates are involved in multiple regression analyses.

Furthermore, the fairly high non-response rate in regards to the working alliance provides evidence of volunteer bias, such that it is possible that participants did not name a vocational worker and report on their relationship during semi-annual interviews when they were in infrequent contact with their vocational workers, hence their vocational workers may not have been a salient part of the employment process when they were stably working. In other words, the choice not to respond to questions about the working alliance may reflect the *lack* of a relationship between clients and vocational workers. It is also possible that these participants chose not to report on the working alliance because they had a poor relationship with their vocational worker, which would serve as a partial explanation for the positive skew of the working alliance scores. Volunteer bias also seems to be noteworthy because participants who never reported on the working alliance with their vocational workers (nonresponders) systematically differed from other study participants and specifically, they had poorer paid job outcomes as compared with participants who reported on the working alliance at some but not all of the follow-up interviews at which they were working (partial responders). These findings possibly suggest that employment success/lack of success influenced the decision to respond to questions about the working alliance, that working alliance differences between these two response groups may have influenced both the decision to respond to questions about the working alliance during semi-annual interviews and overall employment outcomes, or that the groups differed based on some unmeasured factor that impacted both the decision to report on the working alliance and employment outcomes across the study.

Selection bias is also an issue because the study only investigated clients working in paid employment, ignoring clients who were currently unemployed at the semi-annual follow-up periods, which may limit the external validity of the findings (e.g. cannot generalize findings to people with SMI who are unemployed or have difficulty maintaining employment). The use of this employed subsample also introduces the problem of restriction of range, as unemployed clients may have had a poorer working alliance with their vocational workers, possibly affecting employment outcomes. This proposed notion of a better working alliance for employed clients is furthered by the finding that participants included in the study had high working alliance scores, both at the first working alliance time period and across the study. Further, this restriction of range may account for some of the lack of findings in the relationship between the working alliance and the total duration of paid employment and mean paid job tenure.

Another limitation of the current study is the outcome criteria that were utilized. The study failed to address other important vocational and nonvocational outcomes, such as time to first job, wage rate, and job satisfaction. These outcomes are especially important in the context of the working alliance, as it is plausible that a better relationship between the client and vocational worker may lead to a better job match, commensurate with client desires and goals, leading to higher job satisfaction, and perhaps even a higher wage rate as the client succeeds and advances in a job that is a good fit for him or her.

Moreover, measuring the working alliance from the perspective of the client only, rather than measuring this variable from both the perspective of the client and the vocational worker is another weakness of this study. While most studies addressing this issue have found that the client perspective is most predictive of outcomes (e.g. Eames & Roth, 2000; Horvath & Luborsky, 1993), measuring the working alliance from varying perspectives may provide a richer body of information from which it can be better understood how this relationship is formed and maintained in the population of people with SMI.

Future Research

Besides the areas of future research already noted, several other points of future research exist that bare mentioning. Despite the lack of a positive relationship between the working alliance and employment outcomes found in the current study, future research should vigorously study this topic, given the benefits of the working alliance found in rehabilitation research and therapy research, combined with the lack of prior research in this area for people with SMI receiving employment services. Future research should also aim at developing specific tools designed to measure the working alliance for such clients, as the alliance between clients with SMI and their vocational workers may deviate markedly from that found in the traditional therapeutic settings and perhaps even in other rehabilitation realms targeted at different client populations and different activities. Because the current study only focused on working clients and the effects of the working alliance on job tenure, investigating the “early alliance” in initial stages of the employment process for clients who have yet to secure a job (e.g. job development phase), would also be useful. The early alliance is also important to investigate in the realm of employment given that past research has found that the early alliance is the best predictor of future outcomes, in comparison with the alliance measured at later time periods (Horvath & Symonds, 1991). The failure of the current study to address the working alliance from varying perspectives should also be addressed by future studies that should aim at gauging this important variable from the perspective of both the client and the vocational worker, in order to better understand its relationship with crucial vocational (e.g. job tenure, job satisfaction) and nonvocational outcomes (e.g. quality of life), as well as the identification of any discrepancies that might exist between the opinions of clients and service providers. In addition to looking more closely at the components of IPS and DPA services, or individual versus team employment approaches that foster/hinder the working alliance and rehabilitation outcomes, research should address the individual alliance in comparison with an alliance formed with the team as a whole, a notion that is supported by qualitative findings that some ACT teams work to build a relationship between the client and the team as a whole (rather than any particular individual) in order to protect against the potential pernicious impact of staff turnover

(Angell & Mahoney, 2007). Finally, future research should strive to develop new interventions and methods designed to enhance the working alliance in employment programs, ultimately improving the lives of people with SMI, as they are empowered to achieve their employment, rehabilitation, and life goals.

LIST OF REFERENCES

LIST OF REFERENCES

- Alverson, H., Carpenter, E., & Drake, R.E. (2006). An ethnographic study of job seeking among people with severe mental illness. *Psychiatric Rehabilitation Journal*, 30(1), 15-22.
- Angell, B., & Mahoney, C. (2007). Reconceptualizing the case management relationship in intensive treatment: A study of self perceptions and experiences. *Administration and Policy in Mental Health Services Research*, 34(2), 172-188.
- Banks, B., Charleston, T.G., & Mank, D. (2001). Workplace supports, job performance, and integration outcomes for people with psychiatric disabilities. *Psychiatric Rehabilitation Journal*, 24(4), 389-396.
- Beauford, J.E., McNiel, D.E., & Binder, R.L. (1997). Utility of the initial therapeutic alliance in evaluating psychiatric patients' risk of violence. *American Journal of Psychiatry*, 154(9), 1272-1276.
- Becker, D. R., & Drake, R. E. (1993). A working life: The Individual Placement and Support (IPS) Program. Concord, NH: New Hampshire-Dartmouth Psychiatric Research Center.
- Becker, D.R., Xie, H., McHugo, G.J., Halliday, H., & Martinez, R.A. (2006). What predicts supported employment program outcomes? *Community Mental Health Journal*, 42(3), 303-313.
- Bedi, R.P. (2006). Concept mapping the client's perspective on counseling alliance formation. *Journal of Counseling Psychology*, 53(1), 26-35.
- Bedi, R.P., Davis, M.D., & Williams, M. (2005). Critical Incidents in the formation of the therapeutic alliance from the client's perspective. *Psychotherapy: Theory, Research, Practice, Training*, 42(3), 311-323.

- Blatt, S.J., Zuroff, D.C., Quinlan, D.M., & Pilkonis, P.A. (1996). Interpersonal factors in brief treatment of depression: Further analyses of the national institute of mental health treatment of depression collaborative research program. *Journal of Consulting and Clinical Psychology, 64*(1), 162-171.
- Bond, G.R. (1998). Principles of the individual placement and support model: Empirical support. *Psychiatric Rehabilitation Journal, 22*(1), 11-23.
- Bond, G.R. (2004). Supported employment: Evidence for an evidence-based practice. *Psychiatric Rehabilitation Journal, 27*(4), 345-357.
- Bond, G.R., Becker, D.R., Drake, R.E., & Vogler, K.M. (1997). A fidelity scale for the individual placement and support model of supported employment. *Rehabilitation Counseling Bulletin, 40*, 265-284.
- Bond, G.R., Drake, R.E., Mueser, K.T., & Becker, D.R. (1997). An update on supported employment for people with severe mental illness. *Psychiatric Services, 48*, 335-346
- Bond, G.R., Resnick, S.G., Drake, R.E., Haiyi Xie, McHugo, G.J., & Bebout, R.R. (2001). Does competitive employment improve nonvocational outcomes for people with severe mental illness? *Journal of Consulting & Clinical Psychology, 69* (3), 489-501.
- Bond, G.R., Salyers, M.P., Dincin, J., Drake, R.E., Becker, D.R., Fraser, V.V., et al. (under review). A randomized controlled trial comparing two vocational models for people with severe mental illness.
- Bordin, E. (1979). The generalizability of the psychoanalytic concept of the working alliance. *Psychotherapy, Research, and Practice, 16*, 252-260.
- Burke-Miller, J.K., Cook, J.A., Grey, D.D., Razzano, L.A., Blyler, C.R., Leff, H.S., et al. (2006). Demographic characteristics and employment among people with severe mental illness in a multisite study. *Community Mental Health Journal, 42*(2), 143-159.
- Calsyn, R.J., Klinkenberg, W.D., Morse, G.A., & Lemming, M.R. (2004). Client outcomes and the working alliance in assertive community treatment programs. *Case Management Journals, 5*(4), 199-202.

- Calsyn, R.J., Klinkenberg, W.D., Morse, G.A., & Lemming, M.R. (2006). Predictors of the working alliance in assertive community treatment. *Community Mental Health Journal, 42*(2), 161-175.
- Calsyn, R.J., Morse, G.A., & Allen, G. (1999). Predicting the helping alliance with people with a psychiatric disability. *Psychiatric Rehabilitation Journal, 22*(3), 283-288.
- Center for Psychiatric Rehabilitation, *Improved rehabilitation of psychiatrically disabled individuals*. 1989, NIDRR: Boston, MA.
- Cohen, J. (1992). A power primer. *Psychological Bulletin, 112*, 155-159.
- Corbiere, M., Bond, G.R., Goldner, E.M., & Ptasinski, T. (2005). The fidelity of supported employment implementation in Canada and the United States. *Psychiatric Services, 56*(11), 1444-1447.
- Crowther, R.E., Marshall, M., Bond, G.R., & Huxley, P. (2001). Helping people with severe mental illness to obtain work: Systematic review. *British Medical Journal, 322*, 204-208.
- Donnell, C.M., Strauser, D.R., & Lustig, D.C. (2004). The working alliance: rehabilitation outcomes for persons with severe mental illness. *Journal of Rehabilitation, 70*(2), 12-18.
- Drake, R.E. (1998). Whither supported employment? *Psychiatric Rehabilitation Journal, 22*(1), 1-1.
- Drake, R.E., Bond, G.R., & Rapp, C. (2006). Explaining the variance within supported employment programs: Comment on "what predicts supported employment outcomes?" *Community Mental Health Journal, 42*(3), 315-318.
- Eames, V., & Roth, A. (2000). Patient attachment orientation and the early working alliance—a study of patient and therapist reports of alliance quality and rupture. *Psychotherapy Research, 4*(10), 421-434.
- Fabian, E. (1992). Supported employment and the quality of life: Does a job make a difference? *Rehabilitation Counseling Bulletin, 36*(2), 84-97.

- Faul, F., & Erdfelder, E. (1992). GPOWER: A priori, post-hoc, and compromise power analyses for MS-DOS (computer program). Bonn, FRG: Bonn University, Dep. Of Psychology.
- First, M.B., R.L. Spitzer, M. Gibbon, et al., *Structured Clinical Interview for Axis I DSM-IV Disorders – Patient Edition (SCID-I/P, Version 2.0)*. 1994, Biometric Research Department, New York State Psychiatric Institute: New York.
- Frank, A. F., & Gunderson, J. G. (1990). The role of the therapeutic alliance in the treatment of schizophrenia: relationship to course and outcome. *Archives of General Psychiatry* 1990, 45, 228-236.
- Gehrs, M., & Goering, P. (1994). The relationship between the working alliance and rehabilitation outcomes of schizophrenia. *Psychosocial Rehabilitation Journal*, 18(2), 43-54.
- Gold, P.B., Meisler, N., Santos, A.B., Carnemolla, M.A., Williams, O.H., & Keleher, J. (2006). Randomized trial of supported employment integrated with assertive community treatment for rural adults with severe mental illness. *Schizophrenia Bulletin*, 32(2), 378-395.
- Goldberg, R.W., Rollins, A.L., & McNary, S.W. (2004). The working alliance inventory: Modification and use with people with serious mental illness in a vocational rehabilitation program. *Psychiatric Rehabilitation Journal*, 27(3), 267-270.
- Harmon, C., Hawkins, E.J., Lambert, M.J., Slade, K., & Whipple, J.L. (2005). Improving outcomes for poorly responding clients: The use of clinical support tools and feedback to clients. *JCLP/In Session*, 61(2), 175-185.
- Horvath, A.O., & Luborsky, L. (1993). The role of the therapeutic alliance in psychotherapy. *Journal of Consulting and Clinical Psychology*, 61(4), 561-573.
- Horvath, A.O., & Symonds, B.D. (1991). Relation between working alliance and outcome in psychotherapy: A meta-analysis. *Journal of Counseling Psychology*, 38, 139-149.
- Hougaard, E. (1994). The therapeutic alliance—a conceptual analysis. *Scandinavian Journal of Psychology*, 35, 67-85.

- Howgego, I.M., Yellowlees, P., Owen, C., Meldrum, L., & Dark, F. (2003). The therapeutic alliance: the key to effective patient outcomes? A descriptive review of the evidence in community mental health case management. *Australian and New Zealand Journal of Psychiatry*, 37, 169-183.
- Keijsers, G.P.J., Schaap, C.P.D.R., & Hoogduin, C.A.L. (2000). The impact of interpersonal patient and therapist behavior on outcome in cognitive-behavioral therapy. A review of empirical studies. *Behavior Modification*, 24(2), 264-297.
- Kirsh, B., & Tate, E. (2006). Developing a comprehensive understanding of the working alliance in community mental health. *Qualitative Health Research*, 16(8), 1054-1074.
- Klinkenberg, D.W., Calsyn, R.J., & Morse, G.A. (1998). The helping alliance in case management for homeless persons with severe mental illness. *Community Mental Health Journal*, 34(6), 569-578.
- Koop, J., Rollins, A.L., Bond, G.R., Salyers, M.P., Dincin, J., Kinley, T., Shimon, S., & Marcelle, K. (2004). Development of the DPA Fidelity Scale: Using fidelity to define an existing vocational model. *Psychiatric Rehabilitation Journal*, 28, 16-24.
- Leiphart, L.R. & Barnes, M.N. (2005). The client experience of assertive community treatment: A qualitative study. *Psychiatric Rehabilitation Journal*, 28(4), 395-397.
- Lipsey, M.W. (1990). Design sensitivity: Statistical power for experimental research. Newbury Park, CA: SAGE Publications, Inc.
- Lustig, D.C., Strauser, D.R., Rice, N.D., & Rucker, T.F. (2002). The relationship between working alliance and rehabilitation outcomes. *Rehabilitation Counseling Bulletin*, 46(1), 25-33.
- Lustig, D.C., Weems, G.H., & Strauser, D.R. (2004). Rehabilitation service patterns: A rural/urban comparison of success patterns. *Journal of Rehabilitation*, 70(3), 13-19.
- Marrone, J. (1993). Creating positive outcomes for people with severe mental illness. *Psychosocial Rehabilitation Journal*, 17(2), 43-62.

- Marrone, J., Balzell, A., & Gold, M. (1995). Employment supports for people with mental illness. *Psychiatric Services, 46*(7), 707-711.
- Marwaha, S., & Johnson, S. (2005). Views and experiences of employment among people with psychosis: A qualitative descriptive study. *International Journal of Social Psychiatry, 51*(4), 302-316.
- McCabe, R., & Priebe, S. (2004). The therapeutic relationship in the treatment of severe mental illness: A review of methods and findings. *International Journal of Social Psychiatry, 50*(2), 115-128.
- McGrew, J. H., Bond, G. R., Dietzen, L. L., & Salyers, M. P. (1994). Measuring the fidelity of implementation of a mental health program model. *Journal of Consulting and Clinical Psychology, 62*, 670-678.
- McGrew, J.H., Wilson, R.G., & Bond, G.R. (1996). Client perspectives on helpful ingredients of assertive community treatment. *Psychiatric Rehabilitation Journal, 19*(3), 13-21.
- McGurk, S.R., & Mueser, K.T. (2003). Cognitive functioning and employment in severe mental illness. *The Journal of Nervous and Mental Disease, 191*(12), 789-798.
- McGurk, S.R., Mueser, K.T., Harvey, P.D., Marder, J., & LaPuglia, R. (2003). Cognitive and clinical predictors of work outcomes in clients with schizophrenia. *Psychiatric Services, 54*, 1129-1135.
- McGurk, S.R., & Mueser, K.T. (2004). Cognitive functioning, symptoms, and work in supported employment: A review and heuristic model. *Schizophrenia Research, 70*, 147-173.
- McQuilken, M., Zahniser, J.H., Novak, J., Starks, R.D., Olmos, A., & Bond, G.R. (2003). The work project survey: Consumer perspectives on work. *Journal of Vocational Rehabilitation, 18*, 59-68.
- Michon, H.W., van Weeghel, J., Kroon, H., & Schene, A.H. (2005). Person-related predictors of employment outcomes after participation in psychiatric vocational rehabilitation programmes—a systematic review. *Social Psychiatry and Psychiatric Epidemiology, 40*, 408-416.

- Mueser, K., Clark, R., Haines, M., Drake, R.E., McHugo, G.J., Essock, S., et al. (2004). The Hartford study of supported employment for persons with severe mental illness. *Journal of Consulting & Clinical Psychology, 72* (3), 479-490.
- National Organization on Disability, (1998). *Annual Report*. (Online). Available: <http://www.nod.org/annualreport.html>.
- Neale, M.S., & Rosenheck, R.A. (1995). Therapeutic alliance and outcome in a VA intensive case-management program. *Psychiatric Services, 46*(7), 719-721.
- Razzano, L.A., Cook, J.A., Burke-Miller, J.K., Mueser, K.T., Pickett-Schenk, S.A., Grey, D.D., et al. (2005). Clinical factors associated with employment among people with severe mental illness: findings from the employment intervention demonstration program. *The Journal of Nervous and Mental Disease, 193*(11), 705-713.
- Russinova, Z., Wesiorski, N.J., Lyass, A., Rogers, S.E., & Massaro, J.M. (2002). Correlates of vocational recovery for persons with schizophrenia. *International Review of Psychiatry, 14*(4), 303-311.
- Solomon, P., Draine, J., & Delaney, M.A. (1995). The working alliance and consumer case management. *Journal of Mental Health Administration, 22*, 126-134.
- Strauser, D.R., Lustig, D.C., & Donnell, C. (2004). The relationship between working alliance and therapeutic outcomes for individuals with mild mental retardation. *Rehabilitation Counseling Bulletin, 47*(4), 215-223.
- Tessler, R.C., & Goldman, H.H. (1982). The chronically mentally ill: Assessing community support programs. Cambridge, MA: Ballinger Press.
- Thompson, J.P., Boeringa, J.A., Thornby, J., & Lewis, F. (1995). Some outcome predictors for use in vocational rehabilitation planning. *Psychological Reports, 76*(2), 423-426.
- Twamley, E.W., Jeste, D.V., & Lehman, A.F. (2003). Vocational rehabilitation in schizophrenia and other psychotic disorders. *The Journal of Nervous and Mental Disease, 191*, 515-523.
- Van Dongen, C.J. (1996). Quality of life and self-esteem in working and nonworking persons with mental illness. *Community Mental Health Journal, 32*(6), 535-548.

- Walker Buck, P., & Alexander, L.B. (2006). Neglected voices: Consumers with serious mental illness speak about intensive case management. *Administration and Policy in Mental Health Services Research*, 33(4), 470-481.
- Ware, N.C., Tugenberg, T., & Dickey, B. (2004). Practitioner relationships and quality of care for low-income persons with serious mental illness. *Psychiatric Services*, 55(5), 555-559.

TABLES

Table 1
Background Characteristics and Measures

Background Characteristics	Measure/Data Collection Instrument	Measurement Period
Demographic & Clinical History	Uniform Client Data Inventory	baseline
Diagnosis	Structured Clinical Interview for DSM-IV	baseline
Work History	Employment and Income Review	baseline
Psychiatric Symptoms	Positive and Negative Syndrome Scale (PANSS)	baseline

Table 2
Working Alliance Measure Items

Working Alliance Measure Items
1. Overall satisfaction with the relationship
2. Perceived degree of emotional support
3. Perceived degree of instrumental/informational support
4. Frequency of feedback received (either positive or negative)
5. Frequency of contact between client and vocational worker
6. The perceived stressfulness of the relationship
7. How critical the vocational worker is of the client from the perspective of the client

Table 3

Bordin's Working Alliance Model (1979) and Working Alliance Measure Items

Working Alliance Measure Item	Practical Components: <i>(1)Tasks</i> <i>(2)Goals</i>	Emotional Components: <i>(3) Bonds</i>
Overall satisfaction with the relationship		X
Perceived emotional support		X
Perceived instrumental support	X	
Frequency of feedback received	X	
Frequency of contact	X	
Perceived stressfulness of relationship		X
How critical the voc. worker is of client		X

Table 4

Descriptive Statistics of Participant Background Characteristics

Variable	IPS, N=46 N (%)	DPA, N=45 N (%)	Total, N=91 N (%)
Site:			
Thresholds North	35 (76.1%)	32 (71.1%)	67 (73.6%)
Thresholds South	11 (23.9%)	13 (28.9%)	24 (26.4%)
Gender:			
Male	31 (67.4%)	30 (66.7%)	61 (67.0%)
Female	15 (32.6%)	15 (33.3%)	30 (33.0%)
Race:			
African American	21 (45.7%)	19 (42.2%)	40(44.0%)
Hispanic	2 (4.3%)	5 (11.1%)	7 (7.7%)
White	20 (43.5%)	18 (40.0%)	38 (41.8%)
Other	3 (6.5%)	3 (6.7%)	6 (6.6%)
Diagnosis:			
Schizophrenia	16 (34.8%)	15 (33.3%)	31 (34.1%)
Schizoaffective disorder	10 (21.7%)	4 (8.9%)	14 (15.4%)
Bipolar disorders	10 (21.7%)	17 (37.8%)	27 (29.7%)
Depression/Dysthymia	9 (19.6%)	8 (17.8%)	17 (18.7%)
Psychotic NOS	1 (2.2%)	1 (2.2%)	2 (2.2%)
Education:			
Not Graduated H.S.	7 (15.2%)	3 (6.7%)	10 (11.0%)
H.S. graduate or GED	10 (21.7%)	13 (28.9%)	23 (25.3%)
Some College or Associates	24 (52.2%)	22 (48.9%)	46 (50.5%)
College Graduate	4 (8.7%)	4 (8.9%)	8 (8.8%)
Beyond College	1 (2.2%)	3 (6.7%)	4 (4.4%)
Marital Status:			
Never Married	40 (87.0%)	36 (80.0%)	76 (83.5%)
Divorced	4 (8.7%)	4 (8.9%)	8 (8.8%)
Married, separated, or widowed	2(4.3%)	5 (11.1%)	7 (7.7%)
At least 12 months of prior competitive employment:			
Yes	35 (76.1%)	33 (73.3%)	68 (74.7%)
No	11 (23.9%)	12 (26.7%)	23 (25.3%)
Prior Paid Job in the last 5 years:			
Yes	38 (82.6%)	36 (80.0%)	74 (81.3%)
No	8 (17.4%)	9(20.0%)	17 (18.7%)

Table 5

Working Alliance Scale Item and Total Descriptives and Correlations (N=91)

Item	<u>M</u>	<u>SD</u>	2	3	4	5	6	7	WA total
1. Emotional support ¹	4.13	.90	.505**	.483**	.156	.095	.467**	.079	.726**
2. Instrumental support ¹	3.73	1.28		.791**	.017	-.009	.421**	.060	.824**
3. Feedback ¹	3.73	1.24			-.032	.017	.371**	.094	.800**
4. Criticalness ²	4.42	.72				.285**	.288**	-.122	.340**
5. Stressfulness ²	4.57	.67					.219*	-.030	.285**
6. Satisfaction ¹	4.46	.84						.042	.698**
7. Frequency ³	2.15	1.13							.052
First working alliance⁴	25.03	3.73							
Average working alliance⁴	24.70	3.43							

¹ Scale goes from 1 to 5, with 1 representing the lowest degree of the item and 5 representing the highest degree of the item. For example, a score of “1” on overall satisfaction represents “very dissatisfied” and a score of “5” represents “very satisfied.”

² Negative items were on the same 5-point scale and were reverse coded to agree with positive items so a higher score reflects a lower degree of the item

³ Item was deleted from working alliance scale

⁴ Higher working alliance scores indicate a better relationship between client and vocational worker. The scale ranges from 1 to 5 for each of the items on the scale with a maximum total score (indicating strongest measured working alliance) of 30 and a minimum total score of 5 (indicating poorest measured working alliance)

** p < .01

Table 6

Test retest Reliability and Working Alliance Stability Over Time: Zero-order Correlations and Paired Samples t-tests Between Working Alliance Periods

	Correlations	t	Correlations	t	Correlations	t
	Time 2¹		Time 3¹		Time 4¹	
Time 1	.565** (n = 53)	1.78	.420* (n= 34)	0.48	.538* (n= 19)	1.36
Time 2			.518** (n= 34)	0.23	.770** (n= 19)	1.61
Time 3					.624** (n= 19)	-.31

¹ Time 1 is the first working alliance observation regardless of WNG timing (e.g. 6 mos.). Time 2 is the second working alliance observation regardless of WNG timing and so on.

* p< .05

** p< .01

Table 7

Criterion-Related Validity: Descriptives and Zero-order Correlations Between Working Alliance Scores and Satisfaction with Vocational Services Averaged Across the Study (N=91)

Variable	<u>M</u>	<u>SD</u>	Correlations	
			First working alliance score	Working alliance average across study
Feelings about vocational services received ¹	5.41	1.06	.392**	.414**
Satisfaction with vocational services in meeting job goals ¹	5.52	1.07	.436**	.442**

¹ 1= "terrible"... 7= "delighted"

** p< .01

Table 8

Descriptive Statistics and Independent Groups t-tests for Confounds and Two-year Paid Employment outcomes

Variable		N	<u>M</u>	<u>SD</u>	<u>t</u>
Mean Paid Job Tenure at 2-Year Follow-up		91	289.80	218.86	
Employment Group	IPS	46	252.54	208.54	-1.66
	DPA	45	327.89	224.86	
Site	Thresholds North	67	301.29	221.19	.84
	Thresholds South	24	257.72	213.49	
At least 12 months Of Prior Competitive Employment	Yes	68	328.04	226.73	-3.68**
	No	23	176.75	146.64	
At least one prior paid job	Yes	74	277.83	216.23	1.09
	No	17	341.90	229.26	
Total Duration of Paid Employment at 2-Year Follow-up		91	414.46	211.41	
Employment Group	IPS	46	365.76	222.13	-2.27*
	DPA	45	464.24	189.59	
Site	Thresholds North	67	439.09	214.94	1.88
	Thresholds South	24	345.71	188.73	
At least 12 months Of Prior Competitive Employment	Yes	68	435.78	218.91	-1.86
	No	23	351.43	177.03	
At least one paid prior job	Yes	74	414.88	209.63	-.039
	No	17	412.65	225.60	

*p<.05

Table 9

Confounding Variables: Descriptive Statistics and Zero-Order Correlations with Two-year Paid Employment Outcomes

Baseline Variable	N	<u>M</u>	<u>SD</u>	Correlations	
				Mean paid job tenure in days	Total duration of paid employment in days
Work History:					
Weeks at longest paid job in the five years preceding the study [†]	85	153.71	141.46	.183	.261*
Sum of paid weeks worked in the five years preceding the study	74	81.27	75.66	.028	-.045
Symptom Severity:					
PANSS total score	91	57.59	13.14	-.284**	-.157
PANSS positive factor	91	11.58	4.74	-.134	-.059
PANSS negative factor	91	15.02	5.27	-.118	-.053

[†]Statistics after 3 extreme outliers were deleted to increase normality of the distribution

*p<.05

**p<.01

Table 10

Relationships between Predictor Variables: Zero Order Correlations and Independent Groups t-tests (N=91)

Predictor Variable	Zero-order Correlations			t	
	PANSS total score	First working alliance scores	Average working alliance scores	First working alliance scores	Average working alliance scores
Weeks worked at longest prior paid job the five years prior to the study	-.132	.134	.081		
PANSS total score at baseline		-.128	-.112		
Site				-1.49	-1.53.
At least 12 months of prior competitive employment				-0.05	.53

*p<.05

Table 11
Multiple Regression Summary Table for Hypotheses 1-4

Predictor Variables:	R ²	Model Test of Significance	Zero order correlation	Partial correlation	β	t	p
<i>Hypothesis 1¹:</i>	.136	F(3,81)=4.24*					
Vocational program			.234	.202	.197	1.86	.067
Paid work history ²			.261	.279	.274	2.62	.011*
First WA			-.138	-.133	-.130	-1.21	.23
<i>Hypothesis 2³:</i>	.152	F(3,87)=5.20*					
PANSS total score			-.284	-.218	-.235	-2.27	.026*
Competitive work history ⁴			.302	.241	.238	2.31	.023*
First WA			-.102	-.142	-.133	-1.34	.18
<i>Hypothesis 3¹:</i>	.134	F(3,81)=4.19*					
Employment group			.234	.202	.198	1.86	.067
Paid Work History ²			.261	.274	.266	2.56	.012*
WA average			-.149	-.128	-.124	-1.16	.25
<i>Hypothesis 4³:</i>	.167	F(3,87)=5.82*					
PANSS total score			-.284	-.245	-.242	-3.05	.003*
Competitive work history ⁴			.302	.229	.225	2.20	.031*
WA average			-.168	-.210	-.182	-1.84	.069

¹Outcome Variable: Total duration of paid employment in days

²Paid work history is the number of weeks at longest paid job in the five years preceding the study

³Outcome Variable: Mean paid job tenure in days

⁴Competitive work history is participation or lack of participation in at least 12 months of prior competitive employment

* p<.05

**p<.01

Table 12

Descriptive Statistics and Independent Groups t-tests for Hypotheses 5-6, Working Alliance Factors, and Working Alliance Items

Hypotheses:	IPS, N=46		DPA, N=45		t	p	d
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>			
H5: First working alliance scores	25.87	3.69	24.18	3.62	2.21	.030*	.46
H6: Average of working alliance scores across time	25.50	3.62	23.88	3.06	2.31	.023*	.48
WA Factors:							
Factor 1 ¹	16.31	3.39	15.11	2.91	1.81	.074	
Factor 2 ²	9.19	.96	8.77	1.18	1.85	.068	
WA Items:							
Emotional Support	4.19	.73	4.03	.68	1.11	.27	
Instrumental Support	3.76	1.30	3.43	1.21	1.25	.22	
Feedback	3.84	1.19	3.41	1.19	1.72	.088	
Criticalness ³	4.48	.69	4.35	.72	.89	.38	
Stressfulness ³	4.71	.51	4.42	.75	2.11	.038*	.45
Satisfaction	4.52	.72	4.24	.75	1.81	.074	

¹Factor 1 contains the following items: emotional support, instrumental support, feedback, satisfaction

²Factor 2 contains the following items: criticalness, stressfulness

³Negative items are reverse coded so a higher score reflects a lower degree of the item

* p<.05

Table 13

Univariate Correlations Between Working Alliance Item Means, Working Alliance Factor Means, and Employment Outcomes Across the 2-year Study Period (N=91)

Variable	Item 1	Item 2	Item 3	Item 4	Item 5	Item 6	Factor 1	Factor 2
Total duration of paid employment in days	-.095	-.227*	-.210*	-.051	-.109	.153	-.157	-.005
Mean job tenure in days	-.085	-.214*	-.238*	.032	-.095	.068	-.177	-.004

*p<.05

Table 14

Consistency of Vocational Worker Named at Semi-annual Follow-up Periods for Participants Working in Paid Employment

Response Pattern	IPS (N = 25) N (%)	DPA (N = 28) N (%)	Total¹	$\chi^2(1)$
Same vocational worker at all time periods	17 (68.0%)	14 (50.0%)	31	
Same pattern of vocational workers named across time if more than one VW named at each time period	0	2 (7.1%)	2	.663 ^a
Different vocational workers named at each time period	8 (32.0%)	12 (42.9%)	20	

¹ 21 IPS and 28 DPA participants only had one working alliance observation across the study so consistency of the vocational worker named could not be assessed.

^a Compared participants who named the same vocational worker or combination of vocational workers across time (i.e. n=17 in IPS, n=16 in DPA) with those who did not name the same vocational workers across time in IPS and DPA groups

*p<.05

Table 15

Descriptive Statistics and Differences Between Participants Who Named a Vocational Worker and Reported on the Working Alliance and Participants Who Did Not Name a Vocational Worker and Report on the Working Alliance at Semi-annual Follow-up Periods When They Were Working in Paid Employment

Variables and Participants	N	<u>M</u>	<u>SD</u>	<u>t</u>	<u>F(2,103)</u>
First WA scores				.30	
Complete responders ¹	67	25.10	3.72		
Partial Responders ²	24	24.83	3.84		
Average WA scores				.25	
Complete responders ¹	67	24.75	3.55		
Partial Responders ²	24	24.55	3.15		
Total duration of paid employment in days					3.15*
Complete responders ¹	67	390.03	207.25		
Partial Responders ²	24	482.67	212.23		
Nonresponders ³	15	317.20	206.28		
Mean paid job tenure in days					3.71*
Complete responders ¹	67	277.31	208.07		
Partial Responders ²	24	324.66	247.94		
Nonresponders ³	15	144.01	76.23		

¹Participants named a vocational worker and reported on the working alliance at every follow-up time period at which they were working in paid employment

²Participants named a vocational worker and reported on the working alliance at some but not all of the follow-up time periods at which they were working in paid employment

³Participants did not name a vocational worker and reported on the working alliance at any follow-up time period at which they were working in paid employment

*p<.05