THE THERAPEUTIC ALLIANCE IN INDIVIDUAL RESILIENCY TRAINING FOR FIRST EPISODE PSYCHOSIS: RELATIONSHIP WITH TREATMENT OUTCOMES AND THERAPY PARTICIPATION

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ABSTRACT

Julia Browne: The Therapeutic Alliance in Individual Resiliency Training for First Episode Psychosis: Relationship with Treatment Outcomes and Therapy Participation
(Under the direction of David L. Penn)

The therapeutic alliance, or the relationship between the client and provider, has long been considered an essential part of treatment. Despite a large body of work examining the alliance-outcome relationship, very few studies have examined it within individuals with first episode psychosis (FEP). Given the dearth of research examining alliance and outcome in FEP in tandem with the sizeable rise in specialized FEP programs throughout the United States, the potential benefits of this work are substantial. As such, the present study examined the therapeutic alliance and its relationship to treatment outcomes and therapy participation in a sample of 144 FEP clients who received specialized FEP treatment at U.S. clinics. Furthermore, the present study extended prior literature by utilizing an observer-rated alliance measure and by examining between-therapist and within-therapist effects of alliance on outcomes. Results indicated that a better therapeutic alliance was related to improved mental health recovery, psychological well-being, quality of life, total symptoms, negative symptoms, and disorganized symptoms at the end of 24 months controlling for the baseline measure of outcome and treatment-related covariates. Additionally, the between-therapist effect of the alliance was significantly related to better mental health recovery whereas the within-therapist effect of the

alliance was related to better quality of life, total symptoms, and negative symptoms at the end of treatment controlling for the baseline measure of outcome and treatment-related covariates. Future work should consider examining mediators of the alliance-outcome relationship as well as how changes in the alliance relate to changes in outcomes over time.

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DUP	Duration of untreated psychosis
FEP	First episode psychosis
IRT	Individual resiliency training

`INTRODUCTION

Schizophrenia is one of the most disabling illnesses given its lifelong impact on social and community functioning and quality of life (Mueser & McGurk, 2004). But, recent advances in early detection and intervention offer hope for possible recovery. Given that longer duration of untreated psychosis (DUP; i.e., the period of time between onset of symptoms and initiation of treatment) is associated with poorer response to treatment (Marshall et al., 2005; Perkins et al., 2005), early intervention programs for first episode psychosis (FEP) have sought to engage individuals as soon after symptoms emerge as possible. In addition to the value in providing treatment early in the course of illness, specialized FEP programs offer hope and optimism to clients (McGorry, Killackey, & Yung, 2008). The basis of early intervention is that long-term disability is not inevitable and that experiencing psychotic symptoms is not necessarily synonymous with a poor prognosis. Early intervention programs offer intensive support to individuals with FEP not only to aid in achieving symptom remission but also to facilitate improvements in functioning (McGorry, Killackey, & Yung, 2008).

The Early Psychosis Prevention and Intervention Centre (EPPIC), the first specialized early intervention program for FEP, illustrated that providing intensive treatment to this population results in clinical and functional recovery (McGorry, Edwards, Mihalopoulos, Harrigan, & Jackson, 1996). Since the birth of the EPPIC program in Australia, numerous specialized early intervention programs have emerged and replicated the early EPPIC findings (McGorry et al., 1996) by demonstrating that these services are effective in facilitating client recovery (Alvarez-Jimenez, Parker, Hetrick, McGorry, & Gleeson, 2011; Harvey, Lepage, &

Malla, 2007; Kane et al., 2016; Malla, Norman, & Joober, 2005). Unfortunately, despite the known value and continually increasing number of specialized programs for FEP individuals, high rates of treatment dropout (around 30%) prevent many from receiving the care they need (Dixon, Holoshitz, & Nossel, 2016; Doyle et al., 2014; Lal & Malla, 2015; Leclerc, Noto, Bressan, & Brietzke, 2015). Moreover, treatment dropout can result in serious consequences for those with FEP including relapse and re-hospitalization, thus highlighting the need to develop strategies to enhance long-term treatment participation in this population (Dixon et al., 2016).

The majority of research examining treatment noncompliance and dropout in this population has focused on the identification of client risk factors. Specifically, past forensic history, less severe illness severity (e.g., less severe symptoms and shorter DUP), not having a family member involved in treatment, and substance use have been identified as risk factors for treatment noncompliance and dropout among FEP clients (Conus et al., 2010; Miller et al., 2009; Stowkowy, Addington, Liu, Hollowell, and Addington, 2012). Therefore, providers working with these types of clients may need to modify their therapeutic style in order to adequately maintain these individuals in treatment. Moreover, Casey and colleagues (2016) highlighted that client attributions about the cause of mental illness have an impact on client engagement, as measured by the Singh O'Brien Level of Engagement Scale (SOLES; O'Brien et al., 2009). The SOLES, a client-rated scale, assesses the extent to which individuals feel that mental health services and staff are available and helpful (O'Brien et al., 2009). Specifically, Casey and colleagues (2016) found that believing a mental illness is caused by social stress or having odd thoughts was associated with better treatment engagement scores on the SOLES. It may be that individuals who attribute the development of mental illness to social or environmental aspects rather than to biological reasons experience less stigma, which in turn leads to more openness to

and belief in mental health treatment (Casey et al., 2016). Further, it may be that individuals who consider thought processes to be an important part of mental illness etiology may be more receptive to discussing them in treatment.

In addition to these client characteristics, research has focused on the importance of the client-provider relationship, also known as the therapeutic alliance, in facilitating client participation in treatment. In a qualitative study, FEP clients who felt connected to their providers were more likely to remain in treatment (van Schalkwyk, Davidson, & Srihari, 2015). Moreover, Dixon and colleagues (2016) and Doyle and colleagues (2014) discussed the importance of establishing a positive alliance in treatment in order to facilitate adequate participation in services. The therapeutic alliance can be enhanced through the use of specific strategies such as discussing the rationale and goals for treatment, providing care in a supportive and non-judgmental manner, and addressing how treatment aligns with the clients' concerns (Casey et al., 2016; Lal & Malla, 2015; van Schalkwyk et al., 2015). Moreover, employing these recommended strategies within a person-centered, collaborative framework can also produce benefits to the alliance and to the ultimate level of compliance and participation in services (Dixon et al., 2016). Taken together, the therapeutic alliance represents an important and malleable aspect of treatment that can increase compliance and facilitate treatment gains in individuals with FEP.

Given that FEP treatment is beneficial in promoting symptomatic and functional recovery, establishing a positive alliance may be critical for clients to experience these improvements. Unfortunately, limited research examining the impact of the alliance on client outcomes in specialized FEP programs hinders firm conclusions as to its role in this population.

Moreover, none of the few existing studies have examined the relationship between the alliance and treatment outcomes in a specialized FEP program within the United States. The lack of knowledge regarding the therapeutic alliance in U.S.-based FEP programs is especially germane given that a recent policy change (as of 2014) has stipulated that 10% of funds provided to each state from The SAMHSA Mental Health Block Grant is now set aside solely for FEP programs. As a result, the number of programs has already risen dramatically (about ten-fold between 2008 and 2016), highlighting the widespread dissemination currently underway in this country. Given the current status of FEP program creation across the country, prioritizing strategies to enhance compliance to and participation in treatment is more salient than ever.

In order to address this gap in the literature, the present study provided the first examination of the role of the therapeutic alliance in a specialized FEP treatment program that was implemented and tested in the United States. Further, we examined the alliance in the largest FEP treatment trial conducted in the United States to date, which was largely responsible for the national policy change (Kane et al., 2016). Specifically, we examined the associations between the therapeutic alliance and treatment outcomes as well as with therapy participation. To this end, the introduction offers a brief overview of the history, definition, and role of the therapeutic alliance in psychotherapy. Next, the existing literature examining the role of the alliance in schizophrenia treatment and FEP treatment was reviewed. Although FEP and schizophrenia populations are not identical (in terms of acute symptoms and treatment needs), both literatures were reviewed to provide a comprehensive picture of the available information regarding the therapeutic alliance in treatment of those with psychotic disorders.

The Therapeutic Alliance

The therapeutic alliance, broadly defined as the client-therapist relationship, has been widely accepted as a critical element of psychotherapy. The pan-theoretical model specifies three prominent factors of the alliance: goals, tasks, and bonds (Bordin, 1979). A positive alliance occurs when the client and therapist agree on both the treatment targets (goals) and the value of planned strategies to achieve them (tasks; Bordin, 1979; Horvath & Luborsky, 1993). Moreover, a high-quality alliance is characterized by collaboration, mutual trust, and support (bonds; Bordin, 1979; Horvath & Luborsky, 1993). This emphasis on the joint contribution of therapist and client to the relationship represented a significant departure from the early psychoanalytic conceptualization that focused predominantly on the client's unconscious experiences of the alliance (Bordin, 1979; Horvath, Del Re, Flückiger, & Symonds, 2011). Further, Bordin (1979) proposed that the value of the therapeutic alliance spans theoretical orientations and should be given attention in all future psychotherapy research and practice.

Studies examining the role of the therapeutic alliance in general psychotherapy (i.e., in those without psychosis) have proliferated since the emergence of the pan-theoretical model. Results consistently yield a moderate association between alliance and outcome across a variety of psychotherapies (Flückiger, Del Re, Wampold, Symonds, & Horvath, 2012 ; Horvath et al., 2011; Martin, Garske, & Davis, 2000). The alliance-outcome relationship remains relatively unaltered by the type of outcome assessed (e.g., symptoms, global functioning, dropout), the alliance measure used, the outcome rater (e.g., client, therapist, or independent assessor), the timing of the alliance rating (e.g., early, middle, late, or averaged), the length of treatment (e.g., from four to over 50 sessions), or the type of psychotherapy provided (Flückiger et al., 2012; Horvath et al., 2011; Horvath & Luborsky, 1993; Martin et al., 2000; Sharf, Primavera, & Diener, 2010). Though the majority of research in this area has focused on psychotherapy, the

alliance-outcome connection has also been noted in pharmacological treatment for depression (Krupnick et al., 1996).

In line with the view that both the therapist and the client contribute to the therapeutic alliance, some research has examined the relative impact of each individual on outcomes of interest. Specifically, therapist variability in the alliance has been shown to predict client outcomes whereas client variability is unrelated to outcome, signifying the importance of the therapist's role in the therapeutic alliance (Baldwin, Wampold, & Imel, 2007; Del Re, Flückiger, Horvath, Symonds, & Wampold, 2012). Research of this kind has demonstrated that even if two clients had the same alliance score, their outcomes will differ at the end of treatment as long as the therapists they saw had different average alliance ratings (Baldwin et al., 2007). These findings illustrate that some therapists are more effective at developing a strong alliance and that clients of these therapists experience greater improvements at the conclusion of treatment (Del Re et al., 2012). Further, these results suggest that in circumstances where establishing an alliance is difficult, it would be most beneficial for therapists to focus on how *they* may impact the alliance rather than on how clients might hinder its development (Baldwin et al., 2007; Del Re et al., 2012; Zuroff et al., 2010). Studies that have aimed to tease apart the influence of the therapist and the client on the alliance-outcome association lend support to the view that the alliance is a product of both individuals.

The Therapeutic Alliance in Schizophrenia Treatment

Although a considerable amount of research has examined the role of the therapeutic alliance in general adult psychotherapy, far less has focused on its relevance to the treatment of serious mental illnesses like schizophrenia. Schizophrenia was, and to some extent still is, viewed as a disorder that is most effectively treated through medication (Hewitt & Coffey,

2005). As a result, non-pharmacological treatments have not always been considered valuable treatment options for this population, which may explain the limited number of studies examining the alliance in schizophrenia (Hewitt & Coffey, 2005). Medication is still currently considered the first-line treatment for schizophrenia; however, the notion that medication is the sole treatment has been effectively challenged. Residual positive symptoms (e.g., hallucinations and delusions) as well as impairments in social functioning and work ability persist with medication use (Penn et al., 2004). Moreover, the benefits of psychological and psychosocial treatments including assertive community treatment, cognitive remediation, social skills training, cognitive-behavioral therapy (CBT), and supported employment have received significant empirical support (Dixon et al., 2009; Mueser, Deavers, Penn, & Cassisi, 2013; Penn et al., 2004; Pfammatter, Junghan, & Brenner, 2006). As a result of the recognition that non-pharmacological interventions are critical to the treatment of this population, the role of the therapeutic alliance in schizophrenia treatment has gained more research attention over the past few decades.

Given that schizophrenia treatment in multidimensional, the association between the alliance and outcomes has been explored in the context of inpatient and outpatient psychological treatment (Berry et al., 2015; Davis & Lysaker, 2007; Dunn, Morrison, & Bentall, 2006; Frank & Gunderson, 1990; Jung, Wiesjahn, & Lincoln, 2014; Staring, van der Gaag, & Mulder, 2011; Startup, Wilding, & Startup, 2006; Svensson & Hansson, 1999), pharmacological treatment (Day et al, 2005; McCabe et al., 2012; Misdrahi, Petit, Blanc, Bayle, & Llorca, 2012; Weiss, Smith, Hull, Piper, & Huppert, 2002), cognitive remediation (Huddy, Reeder, Kontis, Wykes, & Stahl, 2012), assertive community treatment (Neale & Rosenheck, 1995; Solomon, Draine, & Delaney, 1995), and psychiatric rehabilitation (Gehrs & Goering, 1994). Across these studies, the

therapeutic alliance was examined between clients and various providers including therapists, prescribers, case managers, social workers, and psychiatric nurses.

Consistent with most previous psychotherapy work involving samples without schizophrenia (Flückiger et al., 2012; Horvath et al., 2011; Martin et al., 2000), the majority of studies in this population have examined the alliance in the context of psychological treatments (Shattack et al., 2017). In one of the earliest therapy studies examining the alliance in schizophrenia, Frank and Gunderson (1990) reported that a better alliance significantly predicted symptom improvement for clients who received either insight-oriented or supportive therapy. Yet, studies conducted two decades later found that the alliance was unrelated to symptoms at the end of outpatient CBT (Berry et al., 2015; Jung et al., 2014; Staring et al., 2015). These inconsistent results may be reflective of methodological differences among these studies, in particular the timing of the alliance and outcome assessments. Specifically, Frank and Gunderson (1990) measured the alliance after six months of treatment whereas Berry and colleagues (2015), Jung and colleagues (2014), and Staring and colleagues (2015) all measured the alliance earlier points (i.e., within the first five sessions). Because Frank and Gunderson (1990) examined the alliance after treatment had occurred for six months, it is possible that their rating of alliance could have been an artifact of symptom improvement (Elvins & Green, 2008; Priebe et al., 2011). Assessing the alliance earlier on in treatment helps to diminish the impact of this possible confound because clients are less likely to have experienced substantial improvements during such an early phase of treatment (Elvins & Green, 2008), thus highlighting the importance of utilizing this method (Berry et al., 2015; Jung et al., 2014; Staring et al., 2015).

In studies of outpatient CBT, clients with a stronger therapeutic alliance were more likely to remain in treatment (Startup et al., 2006), be compliant with homework (Dunn et al., 2006),

and experience improvements in work quality (Davis & Lysaker, 2007) than those with a weaker alliance. Moreover, a positive alliance was linked to improvements in global functioning for those who received inpatient cognitive therapy (Svensson & Hansson, 1999). These findings illustrating that the alliance is related to treatment participation, global functioning, and vocational performance are especially promising in light of evidence supporting the efficacy of CBT for schizophrenia (Turner et al., 2014). Moreover, the relationship between the quality of the therapeutic alliance and homework compliance should be highlighted given that completion of out-of-session practice is critical to achieving desired outcomes in CBT (Dunn et al., 2006).

In pharmacological treatment, a strong client-prescriber alliance has been consistently identified as a predictor of better medication adherence (Day et al., 2005; McCabe et al., 2012; Misdrahi et al., 2012; Weiss et al., 2005). Importantly, this association held when adherence was measured by reports from the client, clinician, or informant (e.g., pharmacist or family member). Given the high rates and negative consequences of medication nonadherence in this population (e.g., exacerbation of symptoms, hospitalization, vocational difficulties; Higashi et al., 2013), these findings underscore the importance of developing a strong alliance in pharmacological treatment for schizophrenia.

Cognitive rehabilitation therapists are trained to work collaboratively with clients to aid in the learning of new, more efficient cognitive strategies to facilitate application of those skills to real world functioning (Huddy et al., 2012). Findings suggest that clients who rated the therapeutic alliance higher remained in treatment longer than those who rated it lower (Huddy et al., 2012), thus illustrating the value of the alliance in promoting participation in cognitive rehabilitation. Assertive community treatment, which focuses on developing and practicing daily living skills, is provided at locations in the community that are relevant to the client's everyday

life (Solomon et al., 1995). The alliance that forms between the client and his/her case manager has been associated with improvements in community living skills (Neale & Rosenheck, 1995) and overall quality of life (Solomon et al., 1995). Similarly to assertive community treatment, psychiatric rehabilitation aids individuals in developing skills required to effectively live in the community with the least amount of support from health care professionals (Gehrs & Goering, 1994). In this treatment setting, a strong alliance between client and rehabilitation therapist was associated with greater likelihood of achieving rehabilitation goals (Gehrs & Goering, 1994).

Despite the limited number of studies that have focused on the alliance-outcome relationship in individual treatment for schizophrenia (as compared to general psychotherapy), the existing body of research highlights the importance of the therapeutic alliance across a variety of treatment types and settings as well as with different types of providers. The recognition that the alliance is associated with better adherence to medication (Day et al., 2005; McCabe et al., 2012; Misdrahi et al., 2012; Weiss et al., 2005), as well as participation in psychological interventions (Frank & Gunderson, 1990; Startup et al., 2006) and cognitive remediation (Huddy et al., 2012) is especially germane to schizophrenia treatment given the high rates of nonadherence and dropout (Higashi et al., 2013; Kreyenbuhl et al., 2009). A positive alliance was also linked to improved work quality and global functioning providing support for the notion that a strong alliance may have benefits beyond adherence to and participation in treatment. Moreover, those who reported a stronger alliance with their case managers and therapists in assertive community treatment and psychiatric rehabilitation were more likely to achieve their rehabilitation goals (e.g., apply for a job; Gehrs & Goering, 1994; Solomon et al., 1995) as well as experience improvements in community living skills and quality of life (Neale

& Rosenheck, 1995). Overall, the available evidence suggests that the alliance-outcome association is meaningful and worthy of continued examination in schizophrenia treatment.

The Therapeutic Alliance in FEP Treatment

Although a growing number of studies over the past several decades has examined the extent to which the therapeutic alliance is related to important treatment outcomes in schizophrenia, far fewer have utilized an FEP population. Given the rise in specialized early intervention clinics around the world (McGorry et al., 2008) and the recognition that treatment provided soon after the onset of symptoms may improve prognosis (Alvarez-Jimenez et al., 2011; Marshall et al., 2005; Perkins et al., 2005), individuals with FEP represent a distinct subgroup of those with psychotic disorders. Engaging individuals with schizophrenia in treatment can certainly be challenging (Kreyenbuhl et al., 2009); however, several unique challenges exist within those with FEP. As a result, the formation of a positive alliance and its role in treatment may be different in FEP as compared to schizophrenia. Specifically, because psychosis typically has its onset in in late adolescence/young adulthood (i.e., late teens through early 20s; Kessler et al., 2007), individuals in FEP treatment typically are younger than those receiving treatment for chronic schizophrenia. Moreover, a first episode of psychosis results in a significant disruption of typical adolescent/young adult development (McGorry et al., 1996). For example, FEP clients may have experienced their initial onset of symptoms while in college, thus derailing them from achieving typical developmental milestones. Moreover, many FEP clients may be treatment naïve (i.e., may not have taken psychiatric medication or received psychological services previously), and thus, be overwhelmed by the treatment process. As such, it remains critical to examine the role of the therapeutic alliance in FEP treatment.

The available evidence suggests that a strong therapeutic alliance in FEP is related to fewer negative and disorganized symptoms, better social and global functioning, higher rates of medication adherence, and stronger treatment participation (Berry, Gregg, Lobban, & Barrowclough, 2016; Johansen, Iversen, Melle, & Hestad, 2013; Lecomte et al., 2008; Melau et al., 2015; Montreuil et al., 2012). Further, Berry and Greenwood (2015) found that the therapeutic relationship significantly predicted a client's social inclusion (i.e., the extent to which someone has social contacts and experiences belonging among those contacts) and that this relationship was mediated by client hopefulness. This finding highlights the importance of a supportive therapist-client relationship that engenders hope and optimism about one's self and the future (Berry & Greenwood, 2015). Additionally, Goldsmith and colleagues (2015) found that the effect of increasing the number of sessions a client received of CBT or supportive counseling was dependent on the strength of the alliance. Specifically, they found that when the alliance was positive, providing more sessions resulted in improved symptoms; however, when the alliance was poor, increasing the number of sessions resulted in a worsening of symptoms (Goldsmith et al., 2015).

Despite the fact that a limited number of studies have examined the therapeutic alliance in FEP and even fewer prospectively examined its relationship to outcomes, there is strong initial support for the value of establishing and maintaining a positive alliance in treatment. Prospective studies suggest that a strong alliance is valuable for facilitating client treatment compliance as well as symptomatic and functional recovery (Berry et al., 2016; Berry & Greenwood, 2015; Goldsmith et al., 2015; Montreuil et al., 2012). In particular, the Goldsmith and colleagues (2015) study illustrated that accumulating therapy sessions with a poor client-therapist relationship can actually lead to worsening of symptoms, a finding that emphasizes the

importance of a positive alliance in this population. Moreover, cross-sectional studies have illustrated that a positive alliance is related to important clinical characteristics including less severe symptoms as well as better insight, functioning, and self-efficacy (Johansen et al., 2013; Melau et al., 2015). Finally, studies that have examined the alliance between the client and his/her primary clinician in the context of a specialized FEP program (Lecomte et al., 2008; Melau et al., 2015; Montreuil et al., 2012) provide support for its role in this type of treatment.

The Recovery After an Initial Schizophrenia Episode Early Treatment Program (RAISE ETP), the largest FEP treatment trial ever conducted in the United States, replicated international work in showing that NAVIGATE, a specialized early intervention program, was more effective in improving client outcomes than community care (Kane et al., 2016). Specifically, FEP individuals who received NAVIGATE experienced greater improvements in quality of life, symptoms, and functional outcome (e.g., returning to work and school) than those who received community care (Kane et al., 2016). As mentioned earlier, these promising results led to recent U.S. national policy change resulting in the widespread creation of specialized early intervention programs across the country. Since the NAVIGATE intervention is currently serving as a primary treatment model for emerging clinics, understanding the aspects which made it successful are essential. Further, in order to facilitate effective training of providers, understanding characteristics that impact treatment participation, in particular the therapeutic alliance, remain critical.

The Present Study

Despite the established value of the therapeutic alliance in general adult psychotherapy and the promising initial evidence for its importance in the treatment of psychosis, no study to date has examined its role in an FEP specialized program in the United States. Therefore, new

U.S. FEP programs are being created and delivered without full consideration for the vital role of the alliance in treatment participation and client recovery. Therefore, the present study sought to address this gap by retroactively measuring the therapeutic alliance through the rating of audiotaped therapy sessions that occurred in the RAISE ETP study. Further, we extended prior FEP studies by using an observer-rated measure of the therapeutic alliance and by employing multilevel modeling as the data analytic strategy. Prior to elaborating on the study aims, these two important methodological considerations are described in more detail.

Alliance rater perspective. The majority of studies utilized therapeutic alliance ratings from both the client and provider perspectives, with fewer utilizing ratings from only the client or provider perspectives. Though client and provider ratings are often correlated in psychotherapy studies of individuals without psychosis (Elvins & Green, 2008), the evidence is mixed in treatment studies of those with schizophrenia and FEP. Some research that included both perspectives on the alliance found that the ratings were significantly correlated (Barrowclough et al., 2010; Berry et al., 2016; Davis & Lysaker, 2004; Dunn et al., 2006; Gehrs & Goering, 1994; Johansen et al., 2013; Jung et al., 2014; McCabe et al., 2012; Montreuil et al., 2012; Neale & Rosenheck, 1995); however, several others found that different rater perspectives were unrelated (Couture et al., 2006; Evans-Jones et al., 2009; Huddy et al., 2012; Jung et al., 2015; Wittorf et al., 2009). It may be that clients and providers often focus on different aspects of the alliance, which in turn results in differences in their perception of its quality. Additionally, discrepant ratings may result from providers' misunderstandings or misinterpretations of client emotions, especially when severe negative symptoms are present (e.g., blunted affect). Clients with poor social cognition or severe positive symptoms (e.g., delusional beliefs) may also

inaccurately make assumptions about the intentions of the provider, thus leading to differences in alliance ratings.

Given the several possible reasons for discrepant ratings of the alliance between clients and providers, observer ratings may be valuable to provide an objective account of the quality of the therapeutic alliance. Unfortunately, because of the resources required to produce reliable ratings, they are rarely included (Davis & Lysaker, 2007; Startup et al., 2006). In fact, no study to date has examined observer ratings of the therapeutic alliance and their relationship to outcome in an FEP population. As a result, the present study offers the first investigation of observer-rated alliance and its association with therapy participation and outcomes among FEP individuals who received specialized treatment.

Data analytic procedure. Consistent with most psychotherapy studies involving samples of those without psychosis, the statistical techniques employed in studies of schizophrenia and FEP treatment were not sufficiently complex. Specifically, only two alliance-outcome studies (Jung et al., 2014; Montreuil et al., 2012) utilized statistical techniques that accurately accounted for the nested data structure (clients nested within providers), which may have resulted in overestimations of the alliance-outcome relationship (e.g., in studies that utilized correlations or simple regression) and inaccurate significance values (Raudenbush & Bryk, 2002; Snijders & Bosker, 1999). Further, because providers often deliver services to multiple clients, analyses that allow for the separation of between-therapist and within-therapist effects are valuable. For example, suppose that therapist A and therapist B each provide treatment to five clients and analyses suggest that a more positive alliance is related to improved client outcomes across the ten clients. This finding represents the *total effect* of alliance on outcome, suggesting that a better alliance was related to better outcomes. But, suppose that the average alliance ratings from

therapist A's five clients are higher than those from therapist B's five clients. The total effect does not explain the extent to which the relationship between alliance and outcome is driven by differences among these 10 clients (i.e., *within-therapist effect or client variability*) or differences between therapists A and B (i.e., *between-therapist effect or therapist variability*). On the one hand, it may be that therapist A is more skilled at developing alliances with his/her clients than therapist B, and it is the clients of therapist A who achieve better outcomes (i.e., therapist variability). On the other hand, it may be that some clients are better at developing a strong alliance with their therapist regardless of the average skill level of his/her therapist and it is those clients who achieve better outcomes (i.e., client variability). Therefore, when examining whether a better alliance is associated with better outcomes, it is important to parse apart whether the relationship results primarily from client or therapist variability in the alliance.

Studies of the therapeutic alliance in general adult psychotherapy (i.e., in samples without psychosis) have demonstrated that even when providers are monitored for fidelity, differences among them are still responsible for a significant proportion of variability in the outcomes (Baldwin et al., 2007; Del Re et al., 2012). As a result, analyses that do not utilize techniques to separate the between-therapist and within-therapist effects may not illustrate the full nature of these relationships. Except for a single study (Montreuil et al., 2012), prior FEP research has not utilized statistical techniques that adequately model the dependence that naturally occurs in therapy data (i.e., clients nested within therapists). Moreover, there have not been *any* studies in FEP that have attempted to separate the between-therapist and within-therapists effects of alliance on outcomes. As a result, the extent to which differences between therapists and/or between clients are responsible for the alliance-outcome relationship in this population is currently unknown. The present study offers the first examination of the relationship between

observer-based alliance and outcome in a U.S.-based FEP treatment that utilized advanced statistical modeling techniques that allow for the separation of between-therapist and within-therapist effects.

Aims and Hypotheses

Aim 1. *Total Effect*: To examine the extent to which the alliance is associated with client symptomatic and recovery outcomes including symptoms (total, positive, negative, disorganized, excited, and depressive), quality of life, psychological well-being, and mental health recovery at 24 months (controlling for the baseline measure of outcome). Prior research in the general psychotherapy literature has consistently shown that a positive alliance is associated with numerous treatment outcomes (Flückiger et al., 2012; Horvath et al., 2011; Martin et al., 2000). Within the schizophrenia literature, a positive alliance has been linked to improved symptoms, quality of life, and global functioning (Frank & Gunderson, 1990; Solomon et al., 1995; Svensson & Hanson, 1999). In addition, a positive alliance has been associated with improved symptoms and social functioning in FEP (Berry & Greenwood, 2015; Berry et al., 2016). Although psychological well-being and mental health recovery have not been explored as outcomes in alliance-outcome research, they were shown to be related yet distinct from quality of life and shown to improve over the course of treatment in the RAISE ETP trial (Browne et al., 2017). As a result, we included these two outcomes in our examination of the association between alliance and client outcomes.

Hypothesis. We hypothesized that the alliance would be negatively associated with symptoms and positively associated with quality of life, psychological well-being, and mental health recovery at the end of treatment (24 months) controlling for the baseline measure of outcome.

Aim 2. ***Between-therapist and Within-therapist Effect:*** **To examine the extent to which client and therapist variability in the alliance are associated with client outcomes including symptoms (total, positive, negative, disorganized, excited, and depressive), quality of life, psychological well-being, and mental health recovery at 24 months (controlling for the baseline measure of outcome).** Consistent with prior research examining the relative impact of therapist and client variability (e.g., between-therapist versus within-therapist effects) on the alliance-outcome relationship in samples without psychosis (this has not yet been done in FEP; Baldwin et al., 2007; Del Re et al., 2012; Zuroff et al., 2010), we utilized comparable techniques to examine this in FEP. We examined the impact of therapist and client variability utilizing the same outcomes described in the first aim. This is the first examination of between and within therapist effects on the alliance-outcome association in FEP.

Hypothesis. We hypothesized that therapist but not client variability in the alliance would be significantly negatively associated with symptoms and positively associated with quality of life, psychological well-being, and mental health recovery at the end of treatment controlling for the baseline measure of outcome. In other words, it was hypothesized that the relationship between alliance and outcomes would be driven by between-therapist differences in alliance rather than within-therapist (i.e., client) differences.

Aim 3. ***Total Effect:*** **To examine the extent to which the alliance is associated with therapy participation.** Given the high rates of treatment noncompliance and dropout among those with FEP (Dixon et al., 2016; Doyle et al., 2014; Lal & Malla, 2015; Leclerc et al., 2015), identifying relevant predictors is critical. Prior research in the general psychotherapy literature has demonstrated that a positive alliance is associated with less treatment dropout (Sharf et al., 2010). Further, a positive alliance has been shown to relate to better treatment compliance and

lower dropout in schizophrenia (Frank & Gunderson, 1990; Startup et al., 2006) and in FEP populations (Berry et al., 2016; Lecomte et al., 2008; Montreuil et al., 2012).

Hypothesis. We hypothesized that a better alliance would be related to better therapy participation (operationalized as more attended therapy sessions) during the 24-month period.

Aim 4. *Between-therapist vs. Within-therapist Effect:* To examine the extent to which client and therapist variability in the alliance is associated with therapy participation. As noted in the second aim, prior work has shown that therapist variability in the alliance drives the alliance-outcome relationship as compared to that of clients (Baldwin et al., 2007; Del Re et al., 2012; Zuroff et al., 2010). As a result, the implications of these findings suggest that therapists play the most important role in facilitating a positive alliance that subsequently affects client outcomes. Exploring whether these findings are present for the relationship between alliance and therapy participation in FEP could be highly valuable given the difficulties in maintaining these clients in treatment. Further, these findings could underscore the importance of the therapist's impact on promoting continued participation in treatment within an FEP population.

Hypothesis. We hypothesized that therapist but not client variability in the alliance would be significantly positively associated with better therapy participation (operationalized as total attended therapy sessions). In other words, we expected that the relationship between alliance and therapy participation would be driven by between-therapist differences in alliance rather than within-therapist (i.e., client) differences.

METHOD

Participants and Study Design

Client sample. The RAISE ETP randomized trial comprised 404 participants (223 received NAVIGATE; 181 received community care) who had only experienced one episode of

non-affective psychosis, had taken antipsychotic medications for six months or less, and spoke English (See Kane et al., 2016 for detailed inclusion criteria and demographic/clinical characteristics of the full sample). The present study sample, drawn from the larger RAISE ETP trial, comprises 144 FEP clients who received at least 3 sessions of individual therapy as part of the NAVIGATE intervention (Table 1).

For inclusion in the present study, participants must have received at least 3 sessions of individual therapy (as the alliance is thought to develop over the first 5 sessions with its peak at session 3; Horvath et al. 1993). Additionally, clients must have had at least one session from sessions 3-5 audiotaped (since alliance ratings were made via audiotapes; described in detail in the procedure section and shown in Figure 1) to be included in this study. Finally, a client's overall third, fourth, or fifth session must have also been the third, fourth, or fifth session with their initial individual therapist (defined as the therapist who conducted the first individual therapy session). Specifically, all clients began individual therapy with a given therapist; however, if the therapist called out sick, took a leave of absence, or was out of town, another individual therapist often conducted scheduled sessions (whenever possible) to facilitate continued care. Though the majority of clients had their first five sessions with the same therapist (n=137), a small subsample (n=7) received at least one session during this early portion of therapy (sessions 1-5) with an additional therapist. As a result, it was possible for these seven clients to have their overall third, fourth, or fifth session with a different therapist than their initial assigned therapist. Further, it was possible that their overall third, fourth, or fifth session could have been only the second session with their initial therapist (i.e., if they saw an interim therapist once or twice after their initial session). To account for this, a client's overall third, fourth, or fifth session was only rated if it was also the third, fourth, or fifth session with their

initial individual therapist. Based on the noted criteria, 144 FEP clients were included in the present study.

All NAVIGATE participants were offered individual therapy upon enrolling in the trial, but were not excluded if they declined or discontinued individual therapy. The majority of participants had their first individual therapy session within the first three months of study enrollment (n=138) with far fewer having their first session during months four through nine since study enrollment (n=6).

Therapist sample. Thirty-six therapists from 17 different sites provided individual therapy to the 144 participants in the present study. As a result, therapists provided individual therapy to multiple clients (M=4.00, SD=2.18, Range=1-8). Gender, highest educational degree, and years in the mental health field were obtained via therapist résumés. Therapists received initial training in delivering individual therapy and continued to receive fidelity monitoring and consultation throughout the remainder of the study (See Browne et al., 2016 for a detailed description of therapist fidelity monitoring).

RAISE ETP study design. A cluster randomization design was utilized such that thirty-four community mental health clinics were randomized to provide either NAVIGATE (N=17) or treatment as usual (Community Care, CC; N=17). Since the present study examined the therapeutic alliance in the individual therapy provided in NAVIGATE (which was not provided to CC participants), CC sites (N=17), therapists (number unknown), and participants (n=181) were not included in any analyses.

Measures

Self-report measures were administered at baseline, 3, 6, 12, 18, and 24 months and interview measures were administered at baseline, 6, 12, 18, and 24 months in the RAISE ETP

trial. Interview measures were administered by trained clinician-interviewers masked to study design and participant treatment using live, two-way video conferencing. The present study utilized only baseline and 24-month measures given our interest in examining the relationships between alliance and treatment outcomes controlling for baseline measures. Our decision to examine relationships between alliance and post-treatment (24-month) outcomes rather than between alliance and outcomes during treatment is consistent with primary alliance-outcome work outside of psychosis (Horvath et al., 2011; Horvath & Luborsky, 1993; Krupnick et al., 1996; Martin et al., 2000) as well as the vast majority of alliance-outcome studies within schizophrenia and FEP (e.g., Berry et al., 2015; Berry et al., 2016; Cavelti et al., 2016; Dunn et al., 2006; Frank & Gunderson, 1990; Goldsmith et al., 2015; Huddy et al., 2012; Jung et al., 2014; Weiss et al., 2002). Finally, since the present study examined a subset of measures utilized in RAISE ETP, only these measures are described in detail below (refer to Kane et al., 2016 and Kane et al., 2015 for more details).

Recovery. The Scales of Psychological Well-Being – ETP Modification Version (SPWB) are an 18-item subset of the 84-item full scale developed by Carol Ryff (Ryff, 1989). Items are rated from 1 (Strongly Disagree) to 6 (Strongly Agree) with higher scores reflecting greater psychological well-being. A total score and six subscale scores are produced: environmental mastery, autonomy, personal growth, positive relationships, purpose in life, and self-acceptance (Ryff, 1989). An average score across all 18 items (SPWB Total Average) was utilized in all analyses (scores range from 1-6).

The Mental Health Recovery Measure (MHRM; Young & Bullock, 2003) is designed to assess recovery for individuals with serious and persistent mental illnesses. A modified 15-item version of the 30-item full scale was utilized in the present study. The original scale uses a 5-

point Likert scale (Strongly Disagree, Disagree, Not Sure, Agree, Strongly Agree); however, RAISE-ETP used a 7-point Likert scale for items where Disagree/Agree were subdivided into Moderately Disagree/Agree and Slightly Disagree/Agree. These modifications were made to standardize the scales on all self-report measures and to avoid redundancy among different self-report measures administered in RAISE ETP (since all self-reports were administered simultaneously). The original scale produces 8 domains for scoring; however, because items for RAISE ETP were selected to measure only certain domains, summary scores for this modified version were not calculated. Instead, an average score across all 15 items (MHRM Total Average) was used in analyses (scores range from 1-7).

The Quality of Life Scale (QLS; Heinrichs, Hanlon, & Carpenter, 1984) is a semi-structured interview consisting of 21 items rated on a 0-6 scale (higher scores reflect better quality of life). A total score and four domain scores are produced: interpersonal relations, instrumental role functioning, intrapsychic foundations (i.e., motivation, emotional engagement/capacity of empathy, sense of purpose), and common objects and activities. The QLS total score was used in analyses (scores range from 0-126).

Symptoms. The Positive and Negative Syndrome Scale (PANSS; Kay et al., 1987) is a standardized semi-structured interview for the assessment of symptoms in individuals with schizophrenia spectrum disorders. Thirty items are rated on a 1-7 scale producing a total score and five factor scores: positive, negative, disorganized/concrete, excited, and depressed (Wallwork, Fortgang, Hashimoto, Weinberger, & Dickinson, 2012). The PANSS total score and five factor scores were used in the analyses (scores range from 30-210 for the total score, 4-28 for the positive subscale, 6-42 for the negative subscale, 3-21 for the disorganized/concrete subscale, 4-28 for the excited subscale, and 3-21 for the depressive subscale).

The Calgary Depression Scale for Schizophrenia (CDSS; Addington et al., 1993), a standardized semi-structured interview, was used to assess depressive symptoms. The CDSS total score was used in analyses (Scores range from 0-27).

Therapy participation. Therapy participation was operationalized as the total number of individual therapy sessions a client attended within the 24-month period.

Therapeutic alliance. The observer-based short form of the Vanderbilt Therapeutic Alliance Scale (VTAS-SF; Shelef & Diamond, 2008) was utilized in the present study (See Appendix). The 5-item VTAS-SF is a briefer version of the original 44-item scale (Hartley & Strupp, 1983) and assesses the three components of Bordin's (1979) definition of the therapeutic alliance: agreement on goals, agreement on tasks, and a supportive bond. Items are rated on a 0-5 scale with higher scores indicating a more positive alliance (Note: one item is reverse scored). Modified versions of the VTAS have also been successfully utilized in previous observer-rated alliance studies (Krupnick et al., 1996; Shelef, Diamond, Diamond, & Liddle, 2005). The 5-item version was chosen for the present study given that it is highly correlated with the full-length VTAS (Shelef & Diamond, 2008) and is appropriate for use with audiotapes. Specifically, the items on the VTAS-SF (and the anchor descriptions located in the rating manual) elicit objective observations of client and therapist explicit speech (rather than seeking interpretations of how a client is feeling) and do not make reference to non-verbal visual cues (e.g., body language), both of which are common in other observer scales (Shelef et al., 2005). Finally, the Vanderbilt therapeutic alliance scales are among a handful of measures that have been recommended for use in research (Martin et al., 2000). A total score across all 5 items was used in the present study (scores range from 0-25; Cronbach's alpha = 0.85).

Covariates. Given that the study period spanned 24 months, it was important to control for possible confounding factors. Four variables listed below were considered as possible covariates in the present study. Analyses were run with and without covariates.

Permanent change in therapist. Likely due to staff turnover and other unforeseen circumstances, a portion of the present study sample changed therapists permanently at some point during their 24-month participation in the study (n=29). Given that a permanent change in therapist could have affected treatment outcomes, a binary variable was created to indicate whether a client's therapist changed permanently during the study. In the present study, a permanent change in therapist was defined as having at least two consecutive sessions with a different therapist from the initial therapist and not returning to the initial therapist for any subsequent sessions (i.e., continuing to see a different therapist from the initial therapist or discontinuing therapy). Given that therapists filled in for one another throughout the course of the study (to facilitate continued delivery of individual therapy over the two years), intermittent periods of time with a different therapist did not count as a permanent switch as long as the client returned to the initial therapist.

Timing of alliance assessment. Given that participants were not excluded from NAVIGATE treatment if they discontinued individual therapy or had a long absence, participants varied in the number of months they were enrolled in the study when the alliance was rated (M=3.19, SD = 2.84, range: 1-16). Given that the timing of the alliance assessment could have impacted outcomes as well as confound the alliance rating, it was considered a covariate in analyses.

Participation in additional psychosocial treatment components. Given that individuals who received NAVIGATE services were offered supported employment/education (SEE) and

family psychoeducation services in addition to individual therapy, it is possible that 24-month outcomes were impacted by participation in these additional psychosocial components. As a result, we included the total number of SEE and family psychoeducation visits over the 24-month period as two covariates (Note: Family visits were defined as family psychoeducation sessions where a family member attended [regardless of whether the client attended]).

Intervention

NAVIGATE. NAVIGATE, a specialized FEP treatment, comprised individual therapy, medication management, supported employment and education (SEE), and family psychoeducation (Mueser et al., 2015). Since the present study examined the therapeutic alliance in individual therapy, this intervention is described in more detail below.

Individual resiliency training. Individual resiliency training (IRT), a manual-based individual therapy, was designed to improve well being and social functioning through focusing on a client's strengths and resiliency. IRT integrated three evidence-based treatments including illness self-management, cognitive-behavioral therapy for psychosis, and psychiatric rehabilitation. Moreover, shared decision-making and supporting client autonomy were emphasized within this recovery-oriented approach (Meyer et al., 2015). IRT comprises 14 modules, of which the first seven are considered standard (foundational modules that all clients receive), and the second seven are individualized (modules which are covered if they address client-specific concerns). All clients were offered IRT as part of NAVIGATE (See Meyer et al., 2015 for a detailed description of IRT).

Procedure

Therapeutic alliance rating procedure. To obtain a rating of the therapeutic alliance during the early portion of therapy, session three, four, or five was rated for all individuals in the

present study (n=144). Based on audiotape availability of therapy sessions that occurred with initial therapists during the early part of therapy, session three was rated for the majority of participants (n=107) and session four (n=24) or five (n=13) was rated for the remaining participants. Four research assistants rated all sessions in the present study (rater 1 = 27 sessions, rater 2 = 38 sessions, rater 3 = 40 sessions, and rater 4 = 39 sessions). Detailed information on rater training and drift protocols can be found on the following two pages.

Consistent with previous research, early alliance was defined as occurring between sessions three and five in the present study (Fluckiger et al., 2012; Horvath & Luborsky, 1993). Early alliance has been identified as the most robust predictor of outcome and is thought to develop over the course of the first five sessions with the peak at session three (Elvins & Green, 2008; Horvath & Luborsky, 1993). A measure of middle or late alliance (Fluckiger et al., 2012) was not included in the present study as it can be confounded by treatment gains (e.g., symptom improvement; Elvins & Green, 2008). In addition to several prior meta-analyses that have highlighted the importance of early alliance when examining its relationship to outcome (Horvath et al., 2011; Horvath & Luborsky, 1993; Fluckiger et al., 2012), the majority of work in FEP and schizophrenia has examined early alliance (between sessions three and five) as a predictor of outcome.

Therapeutic alliance rater training procedure. Rater training paralleled procedures from the validation study of the VTAS-SF (Shelef & Diamond, 2008) and the large observer-rated alliance study on depression, which also utilized a modified version of the VTAS (Krupnick et al., 1996). The VTAS-SF rating manual was sent to all four research assistants to read prior to the first training session. Training began with an initial meeting to discuss the definition of the therapeutic alliance, rationale for the present study, and to review the manual.

Minor modifications were made to the rating manual to clarify differences between each alliance score (i.e., one description was given for a rating of 2-3 in the original manual). Similar modifications were made to the VTAS in prior observer-based alliance work (Krupnick et al., 1996). Research assistants were then instructed to rate eight IRT sessions independently and bring their scores to a subsequent meeting where each of the sessions was discussed as a group. Discrepancies among raters were discussed during these in-person meetings. The final stage of training included rating five additional IRT sessions independently. These five ratings were then utilized to calculate reliability. Raters were required to achieve adequate reliability with the gold-standard rater as well as with other raters (Intraclass Correlation [ICC] ≥ .7; Krupnick et al., 1996). Given that the present study utilized the total alliance score in all analyses, ICCs were calculated on the total score rather than on individual items. Rater training was completed in three separate cohorts (each lasting 15-22 hours) due to varied availability of research assistants.

Rater drift. All research assistants participated in monthly check-ins to address any issues that arose. In addition, a rater drift protocol was implemented to assess inter-rater reliability once the project began. Given that there is significant heterogeneity in rater drift protocols (if utilized at all), we modeled our rater drift protocol off of a large observer-rated therapeutic alliance study in which approximately 10% of all sessions were coded by two to four raters and the gold-standard rater (Krupnick et al., 1996). As such, sixteen sessions (four done by each research assistant) were re-rated by a second research assistant and the gold-standard rater (JB). Sessions were chosen at random. We then calculated ICCs among the three raters (original rater, second research assistant, and the gold-standard rater) separately for each group of four sessions as well as on the entire group of sixteen sessions. If the ICCs were acceptable (≥.7), the original ratings were to be utilized in analyses. If the ICCs were unacceptable (<.7), individual

ICCs were to be calculated between each research assistant and the gold-standard rater to determine where drift had occurred. Both raters and the gold-standard rater would then meet to discuss the discrepancies and come to a consensus on the appropriate scores, which would then replace the original scores. All ICCs were in the acceptable range.

RAISE ETP trial procedure. Enrollment in RAISE ETP occurred between July 2010 and July 2012 and all participants were offered treatment for at least 24 months. Study assessments were suspended during hospitalizations and incarcerations, but resumed after release or discharge. The final participant completed 24 months of treatment in July 2014 (See Kane et al., 2016 for more detailed description of RAISE ETP trial procedure).

Data Analytic Plan

Prior to examining the primary four aims of the study, we ran a series of analyses to better characterize the subsample of individuals included in primary analyses. These analyses were conducted using SPSS (Version 24.0) and SAS (Version 9.3). Specifically, we compared the full alliance sample (n=144) to the remaining individuals who received at least three sessions of IRT (n=45). We chose to use the sample of individuals who received at least three sessions of IRT (n=189) as the comparison sample rather than the full NAVIGATE sample (n=223) or the sample of individuals who received at least one session of IRT (n=208) given that our primary inclusion criteria was having received at least three IRT sessions and recognize these individuals may differ from the broader NAVIGATE sample. Additionally, due to missing 24-month outcome data, sample sizes for analyses of recovery and symptomatic outcomes (Aims 1-2) were smaller than the entire alliance sample used to examine analyses with therapy participation (Aims 3-4; n=96 for QLS, CDSS, and PANSS outcomes, n=95 for SPWB, and n=97 for MHRM). As a result, it was important to compare these subsamples to the remaining individuals

who received at least three sessions of IRT but for whom we did not have complete data (alliance scores and/or 24-month outcome).

All four subsamples were compared to the remaining individuals who received at least three sessions of IRT on basic demographics (age, race [Racial Minority vs. White], and gender). In addition, we compared the samples used in recovery and symptomatic outcome analyses (Aims 1-2) to the remaining individuals who received at least three sessions of IRT on baseline values of all outcomes used in analyses (QLS, CDSS, PANSS [total and subscales], SPWB, MHRM). Categorical variables (gender and race) were examined using Rao-Scott adjusted chi-square statistics (adjusted for nesting within site) and continuous variables (age, QLS, CDSS, PANSS [Total and subscales], SPWB, MHRM) were examined by fitting linear mixed models with a random intercept at the site level.

To examine the four primary aims of this study, data were analyzed using multilevel modeling given the nested data structure (clients nested within therapists nested within sites; Raudenbush & Bryke, 2002; Snijders & Bosker, 1999). Analyses were performed using SAS (version 9.3) and the Kenward-Roger fixed effect standard error and degrees of freedom approximation method was used (Kenward & Roger, 1997). A random intercept was included at the therapist and site levels; however, in the event that either (or both) random effect(s) were estimated at zero, the model was re-fit without the corresponding random effect(s). All analyses were run with and without the four specified covariates (permanent change in therapist, months in study at VTAS assessment, number of SEE sessions, and number of family psychoeducation sessions). Detailed procedures organized by aim are below:

Aim 1. *Total Effect:* To examine the extent to which the alliance is associated with client symptomatic and recovery outcomes including symptoms (total, positive, negative,

disorganized, excited, and depressive), quality of life, psychological well-being, and mental health recovery at 24 months (controlling for baseline measure of outcome). To examine aim one, separate linear models were fit for each dependent variable **(**PANSS total score, PANSS positive, PANSS negative, PANSS disorganized/concrete, PANSS excited, PANSS depressed, CDSS total score, QLS total score, SPWB total average, MHRM total average). The purpose of aim one was to examine the total effect of alliance on outcome while controlling for the baseline measure of the outcome. An examination of the total effect of alliance on outcome is the most commonly utilized procedure in alliance-outcome research, especially in meta-analyses (e.g., Horvath et al., 2011; Horvath & Luborsky, 1993; Martin et al., 2000). These analyses offer an initial examination of whether there is a significant relationship between alliance and outcome while controlling for the baseline measure of the outcome.

Aim 2. ***Between-therapist and Within-therapist Effect:*** **To examine the extent to which client and therapist variability in the alliance are associated with client outcomes including symptoms (total, positive, negative, disorganized, excited, and depressive), quality of life, psychological well-being, and mental health recovery at 24 months (controlling for the baseline measure of outcome).** To examine aim two, separate linear models were fit for each dependent variable **(**PANSS total score, PANSS positive, PANSS negative, PANSS disorganized/concrete, PANSS excited, PANSS depressed, CDSS total score, QLS total score, SPWB total average, MHRM total average). Although the total effect (Aim 1) provides an overall examination of the relationship between alliance and outcome, it does not allow for interpretation as to whether this relationship is driven by therapist variability or client variability in the alliance. Specifically, prior research has examined the between-therapist and within-therapist effects on the alliance-outcome relationship and found that it is the differences in

average therapist scores of alliance (i.e., between-therapist effect) that drives the relationship between alliance and outcome (Baldwin et al., 2007; Del Re et al., 2012; Zuroff et al., 2010). Further, Baldwin and colleagues (2007) found that for clients who saw the same therapist, there was not a significant association between alliance and outcome (within-therapist effect) suggesting that the overall relationship is driven most by differences in therapist ability to form alliances with their clients. This type of interpretation is not possible with solely examining the overall alliance effect (Aim 1) as this measure conflates the between-therapist and within-therapist effects.

In order to separate between-therapist and within-therapist effects, we utilized the same data analytic procedure specified in aim one except for modifications to the centering of the alliance measure. Consistent with aim one, we included the 24-month variable as the outcome variable and included the baseline measure of that outcome as a predictor. The alliance score was decomposed into two variables through centering. Specifically, we calculated therapist means of the alliance (averaged over all their clients) and included these mean values as the between-therapist measure of alliance. The within-therapist alliance variable was calculated by centering each client's alliance score around his/her therapist's average score (i.e., client VTAS score minus his/her therapist's average VTAS score). Centering in this way (and including therapist alliance means in the model) allows for the partition of between and within therapist effects (Raudenbush & Bryke, 2002; Snijders & Bosker, 1999), has been successfully utilized in previous alliance research (Baldwin et al., 2007; Zuroff et al., 2010), and is recommended as the data analytic procedure for alliance-outcome research (Del Re et al., 2012).

The therapist-mean-centered alliance score represents the within-therapist effect of alliance on outcome whereas the therapist means represent the between-therapist effect of

alliance on outcome. As a result, the inclusion of both of these predictors allows for interpretation as to whether the relationship between early alliance and outcome is the result of differences in alliance ratings within therapists or between therapists. In other words, if the *within-therapist* alliance measure were significant and positive, it would suggest that for clients who are seen by the same therapist, there was a positive relationship between alliance and outcome. If the *between-therapist* alliance measure was significant and positive, it would suggest that clients whose therapists, on average, had higher alliance scores (averaged across all their clients) would have better outcomes than clients whose therapists, on average, had lower alliance scores (averaged across all their clients). Therefore, each model for aim two contains three predictors (baseline measure, therapist-mean-centered alliance score, and therapist mean alliance scores).

Aim 3. *Total Effect:* To examine the extent to which the alliance is associated with therapy participation. To examine aim three, procedures were identical to those outlined in aim one except that a baseline measure was not included (given that the outcome was therapy participation rather than a 24-month client measure). This aim examines the total effect of alliance on therapy participation. The total number of therapy session attended within 24 months was included as the dependent variable and the alliance score was entered as the sole predictor. This analysis offers an initial examination of whether there is a significant relationship between alliance and therapy participation.

Aim 4. *Between-therapist and Within-therapist Effect:* To examine the extent to which client and therapist variability in the alliance are associated with therapy participation. To examine aim four, procedures paralleled aim two except that a baseline measure was not be included (given that the outcome was therapy participation rather than a 24-month client

measure). Specifically, we included therapy participation as the outcome variable and included between-therapist and within-therapist measures of the alliance as predictors. Centering procedures were identical to those proposed in aim two such that two variables were included: average alliance means for each therapist and the therapist-mean-centered alliance score for each client (i.e., client VTAS score minus his/her therapist's average VTAS score). Therapist-mean-centered alliance reflects the within-therapist effect of alliance and the therapist alliance means reflect the between-therapist effect of alliance.

RESULTS

Subsample Comparisons

Demographic variables. None of the results from Rao-Scott adjusted chi-square tests or linear mixed models were significant indicating that each of the four subsamples (Full Alliance sample: n=144; QLS/PANSS/CDSS sample: n=96; SPWB sample: n=95; MHRM sample: n=97) did not differ significantly from the remaining individuals who received at least three sessions of IRT (Full Alliance comparison sample: n=45; QLS/PANSS/CDSS comparison sample: n=93; SPWB comparison sample: n=94; MHRM comparison sample: n=92) in terms of gender, race, and age.

Baseline variables in present study. None of the results from linear mixed models were significant indicating that each of the three subsamples included in 24-month analyses (QLS/PANSS/CDSS sample: n=96; SPWB sample: n=95; MHRM sample: n=97) did not differ significantly from the remaining individuals who received at least three sessions of IRT (QLS/PANSS/CDSS sample comparison: n=93; SPWB sample comparison: n=94; MHRM sample comparison: n=92) in terms of baseline values of QLS, PANSS (Total, Positive, Negative, Disorganized, Excited, and Depressed), CDSS, SPWB, and MHRM.

Aim 1: *Total Effect* of Alliance on 24-month Symptomatic and Recovery Outcomes

Models without covariates. The therapeutic alliance total effect was significantly and positively related to SPWB Total Average, (t[89]=2.72, p=.008), MHRM Total Average (t[83]=2.60, p=.011), and QLS Total Score (t[92]=2.75, p=.007) at 24 months controlling for the baseline measure of outcome. These results indicate that a better alliance was associated with better psychological well-being, mental health recovery, and quality of life at the end of treatment while controlling for baseline measures. Additionally, the therapeutic alliance total effect was significantly and negatively associated with PANSS Total Score (t[90]=-3.05, p=.003), PANSS Negative (t[93]=-2.47, p=.016), and PANSS Disorganized (t[83]=-2.08, p=.041) scores at 24 months while controlling for the baseline measures. These results indicate that a better therapeutic alliance was associated with less severe total, negative, and disorganized symptoms at the end of treatment while controlling for baseline measures. The therapeutic alliance total effect was not significantly associated with CDSS Total Score, PANSS Positive, PANSS Excited, or PANSS Depressed at 24 months controlling for the baseline measures of outcome (Tables 3 and 4).

Models with covariates. When the four covariates were added to the models, the overall pattern of results remained unchanged. Specifically, the therapeutic alliance total effect remained significantly and positively related to SPWB Total Average, (t[84]=2.04, p=.044), MHRM Total Average (t[90]=2.02, p=.047), and QLS Total Score (t[87]=2.53, p=.013) at 24 months controlling for the baseline measure of outcome and the four covariates. Additionally, the therapeutic alliance total effect remained significantly and negatively associated with PANSS Total Score (t[88]=-2.69, p=.009), PANSS Negative (t[75]=-2.48, p=.016), and PANSS Disorganized (t[86]=-2.14, p=.035) scores at 24 months controlling for baseline measures of

outcome and the four covariates. Finally, the therapeutic alliance total effect was not significantly associated with CDSS Total Score, PANSS Positive, PANSS Excited, or PANSS Depressed at 24 months controlling for the baseline measure of outcome and the four covariates (Tables 3 and 4).

Aim 2: *Between-Therapist and Within-Therapist Effects* of Alliance on 24-month Symptomatic and Recovery Outcomes

Models without covariates. The between-therapist effect was significantly and positively associated with SPWB Total Average (t[55]=2.19, p=.032) and MHRM Total Average (t[33]=2.56, p=.015) at 24 months controlling for the baseline measures. These results indicate that higher therapist average alliance scores were associated with better psychological well-being and mental health recovery at the end of treatment. Further, these results suggest that therapist variability but not client variability in the alliance is responsible for driving the alliance-outcome relationship for psychological well-being and mental health recovery outcomes.

Conversely, the within-therapist effect was significantly and positively associated with QLS Total Score (t[69]=2.48, p=.016) at 24 months controlling for baseline. This result indicates that within therapists, higher alliance scores were associated with better quality of life at the end of treatment controlling for baseline. Further, this result suggests that client variability but not therapist variability in the alliance is responsible for driving the alliance-outcome relationship for quality of life.[1]

The within-therapist effect was significantly and negatively associated with PANSS Total Score (t[62]=-3.00, p=.004) and PANSS Negative scores (t[92]=-2.21, p=.030) at 24 months controlling for the baseline measures of outcome. This result indicates that within therapists, higher alliance scores were associated with less severe total and negative symptoms at the end of treatment. Further, these results indicate that client variability but not therapist variability in the

alliance is responsible for driving the alliance-outcome relationship for total and negative symptoms. Neither between-therapist nor within-therapist effects were significantly associated with CDSS Total Score, PANSS Positive, PANSS Disorganized, PANSS Excited, or PANSS Depressed at the end of treatment controlling for baseline measures of outcome (Tables 5 and 6).

Models with covariates. When the four covariates were added to the models, the overall pattern of results remained unchanged except that the alliance was no longer significantly related to the SPWB Total Average. Specifically, the between-therapist effect remained significantly and positively associated with MHRM Total Average (t[89]=2.02, p=.046) at 24 months controlling for baseline and the four covariates. Additionally, the within-therapist effect remained significantly and positively associated with QLS Total Score (t[84]=2.29, p=.025) at 24 months controlling for baseline and the four covariates. The within-therapist effect remained significantly and negatively associated with PANSS Total Score (t[62]=-2.61, p=.012) and PANSS Negative (t[75]=-2.31, p=.024) at 24 months controlling for the baseline measure and the four covariates. Finally, neither the between-therapist nor within-therapist effects were significantly associated with SPWB Total Average, CDSS Total Score, PANSS Positive, PANSS Disorganized, PANSS Excited, or PANSS Depressed at 24 months controlling for the baseline measure of outcome and the four covariates (Tables 5 and 6).

Aim 3: *Total Effect* of Alliance on Therapy Participation

Model without covariates. The therapeutic alliance total effect was significantly and positively related to the total number of attended therapy sessions over 24 months (t[136]=2.21, p=.029). This result suggests that a better alliance was associated with more attended therapy sessions over the 24-month period (Table 7).

Model with covariates. When the four covariates were included, the therapeutic alliance total effect was no longer significantly related to the total number of attended therapy sessions over 24 months (Table 7).

Aim 4: *Between-Therapist and Within-Therapist Effect* of Alliance on Therapy Participation

Model without covariates. Neither between-therapist nor within-therapist effects were significantly associated with total attended therapy sessions during the 24 months (Table 7).

Model with covariates. Neither between-therapist nor within-therapist effects were significantly associated with total attended therapy sessions during the 24 months when the four covariates were included in the model (Table 7).

DISCUSSION

The present study sought to examine relationships between an observer-rated measure of the therapeutic alliance and client symptomatic and recovery outcomes at the end of treatment. Consistent with substantial prior research (Flückiger et al., 2012; Horvath et al., 2011; Horvath & Luborsky, 1993; Martin et al., 2000) and in line with study hypotheses, a better early therapeutic alliance was significantly related to better treatment outcomes in the present study. Specifically, a better therapeutic alliance was related to better recovery outcomes including psychological well-being, mental health recovery, and quality of life at the end of treatment controlling for baseline and four treatment-related covariates. Additionally, a better therapeutic alliance was related to less severe total symptoms, negative symptoms, and disorganized symptoms at the end of treatment controlling for baseline and all four covariates. These findings are consistent with prior work in schizophrenia and FEP populations that has also reported significant associations between the therapeutic alliance and subsequent recovery and symptomatic outcomes (Berry & Greenwood, 2015; Berry et al., 2016; Catty et al., 2010; Goldsmith et al., 2015; Hopkins &

Ramsundar, 2006; Svensson & Hanson, 1999). The therapeutic alliance was not significantly related to depressive, excitative, or positive symptoms at 24 months controlling for baseline in our sample. It may be that these symptom domains are more likely to be related to other aspects of FEP treatment (e.g., medication compliance and response). Overall, the present results suggest that a better early therapeutic alliance was related to a variety of improved outcomes at the end of FEP treatment.

In addition to examining the total effect of alliance on outcomes, this study was the first to examine between-therapist and within-therapist effects of alliance on outcomes in an FEP sample. Hypotheses were partially supported. In line with hypotheses, the between-therapist effect of alliance was significantly related to mental health recovery at 24 months after controlling for baseline and all of the covariates. This suggests that clients who saw therapists with higher average alliance ratings reported better mental health recovery at the end of treatment than clients who saw therapists with lower average alliance ratings. Contrary to predictions, however, the within-therapist effect of alliance was significantly associated with better quality of life and less severe total and negative symptoms at 24 months after controlling for baseline and treatment-related covariates. These results suggest that client variability but not therapist variability in the alliance was related to improved quality of life and total and negative symptoms at the end of treatment. Taken together, it appears that in FEP, the relative importance of client and therapist variability in the alliance in predicting outcomes may actually depend on the type of outcome.

Substantial prior research in the general psychotherapy literature has found that the between-therapist effect, or therapist variability in the alliance, drives outcomes (Baldwin et al., 2007; Del Re et al., 2012; Zuroff et al., 2010). Yet, because none of these prior studies included

individuals with psychosis, the present findings may represent unique relationships that exist between therapist and client variability in the alliance and outcomes in FEP. To date, just one study has examined between-therapist and within-therapist effects of the alliance on outcomes in a sample of individuals with chronic schizophrenia (none have examined it in FEP) and did not find any significant associations (Jung et al., 2014). Jung and colleagues (2014) noted that their null findings might have resulted from a small sample size and too few therapists to allow for adequate decomposition of alliance effects. As a result, the ability to place the current findings in the context of prior work remains limited.

Nonetheless, these findings suggest that therapist variability and client variability in the alliance are related to different outcomes in FEP. It appears that therapist variability but not client variability is related to subjective measures of recovery and coping (e.g., mental health recovery and psychological well-being). It may be that therapists who are better able to form a positive alliance with clients are viewed as trustworthy, competent, and empathic, which may lead clients to be more open and vulnerable during therapy. In turn, this openness and vulnerability may allow clients to challenge their beliefs about their illness and gain new perspective about their own subjective view of recovery. Our results align with this explanation given that the subjective recovery measures used in this study elicit clients' beliefs about their illness (e.g., "Even though I may still have problems, I value myself as a person of worth"; MHRM, Young & Bullock, 2009) and about their purpose in life (e.g., "I enjoy making plans for the future and working to make them a reality"; SPWB Scale, Ryff, 1989). Moreover, as suggested in prior research (Baldwin et al, 2007; Berry & Greenwood, 2015), a positive therapeutic alliance is thought to instill hope in clients and belief that treatment can help. As such, it may be that therapists who are more effective at establishing strong alliances are also

more skilled at delivering the treatment in a way that illustrates how it can lead to achievement of personally meaningful goals and effective symptom coping. Overall, our findings highlight the importance of therapist differences in alliance building skills in promoting subjective recovery.

Yet, client variability but not therapist variability in the alliance is related to more objective measures of functioning (e.g., symptoms and quality of life) in FEP. It may be that client differences in alliance building skills (regardless of the average abilities of the therapist) are reflective of additional between-client differences that are most salient to quality of life and symptoms. For example, it may be that clients who are able to establish positive alliances with their therapists may have greater motivation to fully engage in treatment (e.g., participate during sessions, complete homework out of session). As a result, it is these between-client (i.e., within-therapist) differences that are most critical to improvements in quality of life and symptoms. Additionally, clients who are able to build strong alliances with their therapists may also be more motivated to make significant changes in their lives (e.g., seek out social contacts, pursue employment or education opportunities). In turn, clients' willingness to engage in behavioral changes may lead to benefits in terms of improved quality of life and total and negative symptoms.

Post-hoc analyses of the four subscales of the QLS lend some support to the explanation that therapist variability is most relevant to subjective recovery whereas client variability is most relevant to objective recovery. Specifically, client variability was significantly related to role functioning, a subscale that elicits ratings of client's work and school functioning (Heinrichs et al., 1984). As suggested earlier, it may be that clients who are more skilled at developing alliances are also more motivated and willing to make behavioral changes in these domains, thus explaining the significant relationship between client variability and improved role functioning.

In addition, both client variability and therapist variability in the alliance were significantly related to improvements in intrapsychic foundations, a subscale of the QLS that contains items assessing objective (e.g., time utilization) and subjective (e.g., capacity for empathy) aspects of recovery (Heinrichs et al., 1984). As such, it is plausible that both sources of variability would be significantly related to this subscale. Although these explanations are solely speculative at this time, they may be beneficial to consider as areas of future research.

In terms of therapy participation, the results showed that a better alliance was significantly related to accumulating more attended therapy sessions at the end of 24 months in the model without covariates. This finding is consistent with prior work that reported significant relationships between a positive alliance and more attended sessions, staying in treatment longer, and better therapist-rated service engagement (Berry et al., 2016; Frank & Gunderson, 1990; Lecomte et al., 2008; Startup et al., 2006) in FEP and schizophrenia. But, it is important to note that the significant relationship between alliance and attended sessions was completely diminished when covariates were added. This finding illustrates that multiple factors can influence how many therapy sessions a client attends, which may suggest that this variable was not fully able to capture therapy participation in the way we had intended. Specifically, we had hoped to utilize the total sessions of therapy as a proxy for how willing clients were to attend therapy, thereby providing information related to perceptions of how helpful treatment was. As a result, it may be that total number of attended IRT therapy sessions was more a product of treatment-related factors than a client's willingness or confidence in treatment. Thus, it may be valuable for future work to operationalize therapy participation differently than was done in the present study. Specifically, Holdsworth , Bowen, Brown and colleagues (2014) proposed a model of client engagement as being comprised of three process variables including attendance,

active participation during sessions, and active participation between sessions. Further, they explain that examining active participation during and between sessions may more reliably assess engagement as compared to attendance (Holdsworth et al., 2014). As such, future work should consider examining these variables in order to assess relationships between the alliance and therapy participation and engagement.

Limitations

The present study had a number of limitations that deserve attention. First, directionality cannot be inferred as all analyses were correlational. Second, p-values involving the well-being and mental health recovery measures were barely significant at the .05 level (ranging from .044-.047) and thus should be interpreted with caution. Third, the alliance was rated from audiotaped therapy sessions, which prevented raters from observing non-verbal cues that may have been relevant to ratings (e.g., body language, facial expressions, etc.). Fourth, the alliance was measured at only one time point such that any fluctuations in the alliance over the course of treatment were not accounted for in the present study. Fifth, there was a substantial amount of missing outcome data, which reduced the sample size and thus, likely limited statistical power. Sixth, the therapy participation variable (total number of attended therapy sessions) was limited in that it did not account for missed sessions or length of sessions. Moreover, this variable fails to capture a client's confidence in treatment or willingness to participate during sessions. Finally, given that the present study used an observer-rated alliance scale, results from the present study may not be directly comparable to prior alliance-outcome work in FEP that has utilized provider-rated and/or client-rated alliance scales. Therefore, it is important to conceptualize the present findings as reflecting relationships between an objective (rather than a subjective) rating of the therapeutic alliance and outcomes in FEP.

Future Directions

In addition to addressing the noted limitations, future research may consider investigating several remaining research questions related to the alliance-outcome relationship in FEP. First, it may be beneficial to examine how an objective rating of the alliance is related to the subjective experience of the client and/or therapist and whether some or all of these perspectives are related to outcomes. Although large meta-analyses have determined that the alliance-outcome relationship remains relatively unaltered by the alliance rater perspective (Flückiger et al., 2012; Horvath et al., 2011; Horvath & Luborsky, 1993; Martin et al., 2000), it is unclear whether that is also the case for samples of individuals with psychosis. There are certainly reasons why alliance scores may differ for a given FEP client-therapist dyad depending on who rates it. For example, a client with severe positive symptoms could hold delusional beliefs about his/her therapist and thus rate the alliance as quite poor. But, such beliefs may not be apparent to an observer and as a result, may lead to a more positive rating of the alliance, especially if the client appeared to agree with the goals/tasks of the session. Further, it is possible that the therapist's rating of the alliance may reflect his/her own views of how much the client is responding to therapy. As such, it would be valuable to examine how an observer alliance rating compares to the subjective ratings made by the members of the dyad and how all three perspectives relate to outcomes.

Second, future work should consider examining changes in the alliance over the course of FEP treatment. This may be particularly salient when considering therapist training and supervision as measurement of alliance changes could be a critical tool used to track progress. Though the majority of alliance-outcome work has focused on early alliance (as was done in the present study), assuming the alliance remains stable over the course of treatment may be inaccurate. A study using a sample without psychosis has shown that within-treatment changes in

the alliance are related to outcomes (Zilcha-Mano et al., 2016) lending support that the alliance changes over the course of treatment. Further, it may be that changes in the alliance correspond to important moments in therapy such that they lead to a strengthening of the therapeutic relationship and thus, promote improved outcomes. In fact, general psychotherapy literature describes the importance of managing and repairing ruptures in the alliance in promoting long-term outcomes (Safran, Muran, Samstag, & Stevens, 2001). As a result, it may be valuable to examine how changes in the alliance are related to changes in outcomes over the course of treatment.

Third and possibly most importantly, future studies should seek to better understand why a better alliance is related to treatment outcomes. Despite the vast literature exploring the alliance-outcome relationship, there is little consensus as to its underlying mechanisms. Berry and Greenwood (2015) suggested that the therapeutic alliance may instill hope and optimism in clients, thereby leading to improved outcomes at the end of therapy. Further, it may be that a strong therapeutic alliance results in improved interest and commitment to therapy, thus allowing for clients to experience more of the benefits that therapy has to offer. In fact, Goldsmith and colleagues (2015) found that when a positive alliance was paired with more sessions of CBT or supportive counseling, clients experienced greater improvements in symptoms after 18 months but when a negative alliance was paired with more sessions of CBT or supportive counseling, clients experienced a worsening of symptoms 18 months later. Given these promising initial results in schizophrenia samples, it may be valuable to examine whether client hopefulness, optimism, and participation mediate the relationship between alliance and outcomes in FEP. Additionally, it may be that other unexplored therapist and/or client factors could act as mediators of the alliance-outcome relationship. For example, it may be that a positive therapeutic

alliance produces feelings of connectedness and less loneliness for clients, which then facilitates more active engagement in relationships and activities, thereby improving outcomes. Exploring connectedness as a mediator may be especially relevant for individuals with FEP who often experience significant social isolation, loneliness, and dissatisfaction with relationships (Stain et al., 2012; Lim & Gleeson, 2010; Lim et al., 2018).

Finally, in her recent review, Zilcha-Mano (2017) proposed a new, two-factor model of the therapeutic alliance that is based on the notion that the alliance is comprised of state-like and trait-like aspects. Specifically, trait-like aspects reflect a client's general ability to form relationships whereas state-like aspects reflect the process of learning how to form meaningful relationships through the development of an alliance with the therapist (Zilcha-Mano, 2017). Examination of these different aspects of the alliance and their relationship to outcomes could help to investigate whether the alliance solely allows for treatment to be effective or whether the process of establishing an alliance with one's therapist is therapeutic in and of itself (Zilcha-Mano, 2017). As such, future research should consider testing this new theory to gain a better understanding of why the alliance is related to better outcomes.

CONCLUSIONS

Overall, the results of the present study suggest that the therapeutic alliance was significantly related to treatment outcomes among FEP clients who received IRT as part of coordinated specialty care treatment. Specifically, a more positive therapeutic alliance early in therapy was associated with better mental health recovery, psychological well-being, quality of life, total symptoms, negative symptoms, and disorganized symptoms at 24 months after controlling for the baseline measure of outcome and several other treatment-related covariates. In addition to illustrating the total effect of alliance on outcomes, the present study decomposed the

effects into between-therapist and within-therapist effects on outcomes. Results from these analyses demonstrated that therapist variability in the alliance was significantly related to mental health recovery whereas client variability in the alliance was significantly related to quality of life as well as total and negative symptoms. These findings suggest that the alliance-outcome relationship may not be consistently driven by client or therapist variability within FEP. Instead, it appears client and therapist variability in the alliance are each important for specific outcomes in this population.

The present study offered the first investigation of the alliance-outcome relationship in FEP when alliance was rated using an observer scale. Furthermore, this is the first FEP study to examine between-therapist and within-therapist effects of the alliance on outcomes. As such, the present study offers unique insights into the alliance-outcome relationship in FEP and hopefully elicits interest in furthering this line of research with future studies. Future work should prioritize examining mediators of the alliance-outcome relationship as well as examining relationships between changes in alliance and changes in outcomes over time so as to better understand the nature of the alliance-outcome relationship. It is through future work that a clearer understanding of the alliance-outcome relationship will emerge and thus, lead to superior treatment delivery and ultimately, improved recovery for those with FEP.

Table 1

Demographic, Clinical, and Baseline Characteristics of Client Participants

	Participants (*n*=144)
Demographic Characteristics	
Male, n (%)	110 (76)
Age (years), M (SD)	23.82 (5.56)
Race, n (%)	
Caucasian	86 (60)
African American	45 (31)
Other	13 (9)
Ethnicity, n (%)	
Hispanic	33 (23)
Education, n (%)[a]	
Completed college or higher	6 (4)
Some college, no degree	43 (30)
Completed high school	48 (33)
Some high school	41 (29)
Some or completed grade school	5 (4)
Current student, n (%)	27 (19)
Currently Employed, n (%)	17 (12)
Clinical Characteristics	
Diagnosis, n (%)	
Schizophrenia	80 (56)
Schizoaffective bipolar	10 (7)
Schizoaffective depressive	22 (15)
Schizophreniform	21 (15)
Brief psychotic disorder	1 (<1)
Psychotic disorder NOS	10 (7)
DUP (weeks), M (SD)[a]	196.91(267.52)
Total Number of IRT Sessions after 24 months, M (SD), range	21.62 (14.98), 3-64
Total Months in NAVIGATE at VTAS Assessment, M (SD), range	3.19 (2.84), 1-16
VTAS Total Score, M (SD), range	17.48 (3.64), 6-24
Baseline Characteristics, M (SD)	
SPWB Total Average[b]	3.99 (0.85)
MHRM Total Average	4.94 (1.28)
QLS Total Score[a]	50.69 (18.53)
PANSS Total Score[a]	78.33 (15.01)
PANSS Positive[a]	12.59 (4.03)
PANSS Negative[a]	16.67 (5.45)
PANSS Disorganized[a]	8.20 (2.89)
PANSS Excited[a]	6.78 (2.88)
PANSS Depressed[a]	8.29 (3.20)
CDSS Total Score[a]	4.62 (4.22)

Note. NOS = Not otherwise specified; DUP = Duration of untreated psychosis; IRT = Individual Resiliency Training; SPWB = Scales of Psychological Well-Being; MHRM = Mental Health Recovery Measure; QLS = Quality of Life Scale; PANSS = Positive and Negative Syndrome Scale; CDSS = Calgary Depression Scale for Schizophrenia.

[a] *n*=143, [b] *n*=141

Table 2

Demographic Characteristics of IRT Therapists

	IRT Therapists (n=36)
Gender, n (%)	
Male	10 (28)
Female	26 (72)
Years in Mental Health Field, M (SD)[a]	11.26 (8.81)
Highest Educational Degree, n (%)	
Bachelor's Degree	3 (8)
Master's Degree	26 (72)
Doctorate	7 (19)

[a] $n = 34$

Table 3

Therapeutic Alliance Total Effect Predicting 24-month Recovery Outcomes

	SPWB Total Average[a]				**SPWB Total Average[a] (with covariates)**				**MHRM Total Average[b]**				**MHRM Total Average[b] (with covariates)**			
Predictor Variable	Est.	SE	t	p	Est.	SE	t	p	Est.	SE	t	p	Est.	SE	t	p
Baseline Measure	.458	.093	4.94	<.0001	.471	.091	5.17	<.0001	.556	.080	6.97	<.0001	.549	.075	7.29	<.0001
VTAS Total Score	.072	.027	2.72	.008	.054	.026	2.04	.044	.079	.030	2.60	.011	.058	.029	2.02	.047

	QLS Total Score[c]				**QLS Total Score[c] (with covariates)**			
Predictor Variable	Est.	SE	t	p	Est.	SE	t	p
Baseline Measure	.694	.106	6.53	<.0001	.685	.109	6.26	<.0001
VTAS Total Score	1.70	.617	2.75	.007	1.65	.651	2.53	.013

Note. Est. = Estimate; SE = Standard Error; VTAS = Vanderbilt Therapeutic Alliance Scale; SPWB = Scales of Psychological Well-being; MHRM = Mental Health Recovery Measure; QLS = Quality of Life Scale. Due to missing 24-month data, sample sizes were smaller than full alliance sample (sample sizes for each outcome variable are listed below). Four covariates (months in study at VTAS assessment, permanent change in therapist [0=did not change, 1=changed], number of supported employment/education sessions, number of family psychoeducation sessions) were included in the indicated models.

[a] n=95

[b] n=97

[c] n=96

Table 4

Therapeutic Alliance Total Effect Predicting 24-month Symptomatic Outcomes

	CDSS Total Score				**CDSS Total Score** (with covariates)				**PANSS Total Score**				**PANSS Total Score** (with covariates)			
Predictor Variable	Est.	SE	t	p	Est.	SE	t	p	Est.	SE	t	p	Est.	SE	t	p
Baseline Measure	.300	.066	4.52	<.0001	.293	.064	4.56	<.0001	.474	.086	5.50	<.0001	.483	.086	5.61	<.0001
VTAS Total Score	-.126	.087	-1.45	.150	-.030	.085	-.35	.724	-1.33	.435	-3.05	.003	-1.22	.452	-2.69	.009

	PANSS Positive				**PANSS Positive** (with covariates)				**PANSS Negative**				**PANSS Negative** (with covariates)			
Predictor Variable	Est.	SE	t	p	Est.	SE	t	p	Est.	SE	t	p	Est.	SE	t	p
Baseline Measure	.398	.091	4.37	<.0001	.367	.095	3.84	.0002	.434	.099	4.38	<.0001	.414	.106	3.90	.0002
VTAS Total Score	-.116	.115	-1.00	.319	-.051	.127	-.40	.687	-.426	.173	-2.47	.016	-.498	.201	-2.48	.016

	PANSS Disorganized				**PANSS Disorganized** (with covariates)				**PANSS Excited**				**PANSS Excited** (with covariates)			
Predictor Variable	Est.	SE	t	p	Est.	SE	t	p	Est.	SE	t	p	Est.	SE	t	p
Baseline Measure	.341	.079	4.32	<.0001	.336	.080	4.20	<.0001	.265	.090	2.96	.004	.249	.091	2.73	.008
VTAS Total Score	-.157	.075	-2.08	.041	-.169	.079	-2.14	.035	-.145	.085	-1.71	.091	-.127	.089	-1.43	.158

	PANSS Depressed				**PANSS Depressed** (with covariates)			
Predictor Variable	Est.	SE	t	p	Est.	SE	t	p
Baseline Measure	.504	.085	5.91	<.0001	.514	.086	6.01	<.0001
VTAS Total Score	-.033	.087	-.38	.704	.027	.089	.30	.764

Note. Est. = Estimate; SE = Standard Error; VTAS = Vanderbilt Therapeutic Alliance Scale; CDSS = Calgary Depression Scale for Schizophrenia; PANSS = Positive and Negative Syndrome Scale. Due to missing 24-month data, sample sizes were smaller than full alliance sample (n=96). Four covariates (months in study at VTAS assessment, permanent change in therapist [0=did not change, 1=changed], number of supported employment/education sessions, number of family psychoeducation sessions) were included in the indicated models.

Table 5

Between-Therapist and Within-Therapist Effects of Alliance Predicting 24-month Recovery Outcomes

	SPWB Total Average[a]				SPWB Total Average[a] (with covariates)				MHRM Total Average[b]				MHRM Total Average[b] (with covariates)			
Predictor Variable	Est.	SE	t	p	Est.	SE	t	p	Est.	SE	t	p	Est.	SE	t	p
Baseline Measure	.466	.094	4.96	<.0001	.477	.093	5.14	<.0001	.563	.080	7.03	<.0001	.555	.076	7.32	<.0001
VTAS – Between-Therapist Effect	.090	.041	2.19	.032	.065	.040	1.61	.112	.111	.043	2.56	.015	.082	.041	2.02	.046
VTAS – Within-Therapist Effect	.058	.035	1.67	.098	.045	.034	1.32	.191	.049	.041	1.20	.233	.035	.040	.88	.379

	QLS Total Score[c]				QLS Total Score[c] (with covariates)			
Predictor Variable	Est.	SE	t	p	Est.	SE	t	p
Baseline Measure	.701	.110	6.35	<.0001	.689	.110	6.26	<.0001
VTAS – Between-Therapist Effect	1.30	.971	1.34	.193	1.33	.951	1.40	.168
VTAS – Within-Therapist Effect	2.01	.808	2.48	.016	1.89	.827	2.29	.025

Note. Est. = Estimate; SE = Standard Error; VTAS = Vanderbilt Therapeutic Alliance Scale; SPWB = Scales of Psychological Well-being; MHRM = Mental Health Recovery Measure; QLS = Quality of Life Scale. Due to missing 24-month data, sample sizes were smaller than full alliance sample (sample sizes for each outcome variable are listed below). Four covariates (months in study at VTAS assessment, permanent change in therapist [0=did not change, 1=changed], number of supported employment/education sessions, number of family psychoeducation sessions) were included in the indicated models. Between-therapist effect = average therapist VTAS scores; Within-therapist effect = client VTAS score - his/her therapist's average VTAS score.

[a] n=95

[b] n=97

[c] n=96

Table 6

Between-Therapist and Within-Therapist Effects of Alliance Predicting 24-month Symptomatic Outcomes

	CDSS Total Score				**CDSS Total Score** (with covariates)				**PANSS Total Score**				**PANSS Total Score** (with covariates)			
Predictor Variable	Est.	SE	t	p	Est.	SE	t	p	Est.	SE	t	p	Est.	SE	t	p
Baseline Measure	.300	.067	4.50	<.0001	.293	.064	4.54	<.0001	.473	.086	5.47	<.0001	.481	.086	5.57	<.0001
VTAS – Between-Therapist Effect	-.150	.137	-1.09	.285	-.042	.124	-.34	.739	-.889	.700	-1.27	.217	-.872	.739	-1.18	.251
VTAS – Within-Therapist Effect	-.111	.109	-1.02	.313	-.021	.110	-.19	.847	-1.58	.527	-3.00	.004	-1.40	.537	-2.61	.012

	PANSS Positive				**PANSS Positive** (with covariates)				**PANSS Negative**				**PANSS Negative** (with covariates)			
Predictor Variable	Est.	SE	t	p	Est.	SE	t	p	Est.	SE	t	p	Est.	SE	t	p
Baseline Measure	.398	.091	4.35	<.0001	.366	.096	3.82	.0003	.434	.099	4.36	<.0001	.413	.107	3.88	.0002
VTAS – Between-Therapist Effect	-.049	.182	-.27	.791	-.010	.206	-.05	.961	-.336	.234	-1.44	.153	-.417	.275	-1.51	.141
VTAS – Within-Therapist Effect	-.158	.144	-1.10	.274	-.074	.150	-.49	.623	-.516	.234	-2.21	.030	-.571	.247	-2.31	.024

Note. Est. = Estimate; SE = Standard Error; VTAS = Vanderbilt Therapeutic Alliance Scale; CDSS = Calgary Depression Scale for Schizophrenia; PANSS = Positive and Negative Syndrome Scale. Due to missing 24-month data, sample sizes were smaller than full alliance sample (n=96). Four covariates (months in study at VTAS assessment, permanent change in therapist [0=did not change, 1=changed], number of supported employment/education sessions, number of family psychoeducation sessions) were included in the indicated models. Between-therapist effect = average therapist VTAS scores; Within-therapist effect = client VTAS score - his/her therapist's average VTAS score.

Table 6 (continued)

Between-Therapist and Within-Therapist Effects of Alliance Predicting 24-month Symptomatic Outcomes

	PANSS Disorganized				**PANSS Disorganized** (with covariates)				**PANSS Excited**				**PANSS Excited** (with covariates)			
Predictor Variable	Est.	SE	t	p	Est.	SE	t	p	Est.	SE	t	p	Est.	SE	t	p
Baseline Measure	.340	.080	4.27	<.0001	.337	.081	4.17	<.0001	.260	.090	2.88	.005	.243	.092	2.64	.010
VTAS – Between-Therapist Effect	-.133	.122	-1.09	.291	-.163	.129	-1.26	.221	-.064	.139	-.46	.647	-.034	.140	-.24	.811
VTAS – Within-Therapist Effect	-.173	.090	-1.91	.061	-.173	.094	-1.85	.070	-.190	.104	-1.83	.071	-.184	.110	-1.67	.100

	PANSS Depressed				**PANSS Depressed** (with covariates)			
Predictor Variable	Est.	SE	t	p	Est.	SE	t	p
Baseline Measure	.502	.085	5.88	<.0001	.513	.086	6.00	<.0001
VTAS – Between-Therapist Effect	.013	.137	.09	.925	.093	.141	.66	.515
VTAS – Within-Therapist Effect	-.063	.108	-.58	.562	-.013	.108	-.12	.908

Note. Est. = Estimate; SE = Standard Error; VTAS = Vanderbilt Therapeutic Alliance Scale; PANSS = Positive and Negative Syndrome Scale. Due to missing 24-month data, sample sizes were smaller than full alliance sample (n=96). Four covariates (months in study at VTAS assessment, permanent change in therapist [0=did not change, 1=changed], number of supported employment/education sessions, number of family psychoeducation sessions) were included in the indicated models. Between-therapist effect = average therapist VTAS scores; Within-therapist effect = client VTAS score - his/her therapist's average VTAS score.

Table 7

Total Effect and Between-Therapist and Within-Therapist Effects of Alliance Predicting Therapy Participation During 24 Months

A. Total Effect

	Total IRT Sessions				**Total IRT Sessions** (with covariates)			
Predictor Variable	Est.	SE	t	p	Est.	SE	t	p
VTAS Total Score	.713	.323	2.21	.029	.118	.289	.41	.684

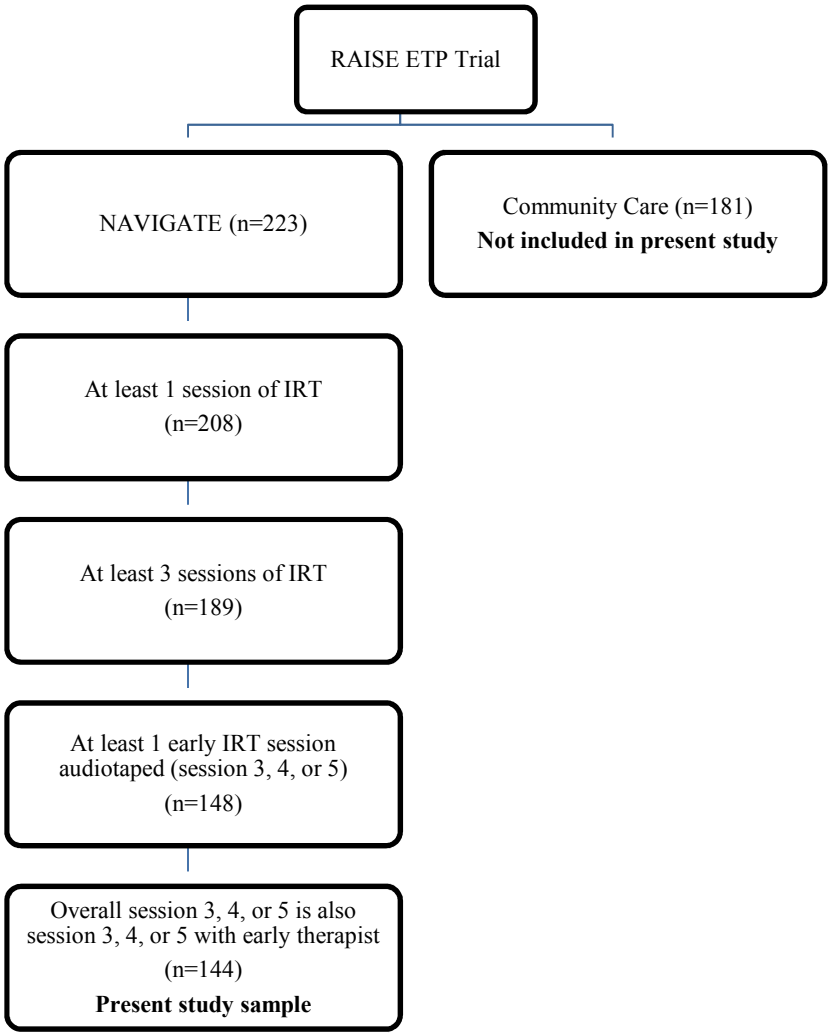
B. Between-Therapist and Within-Therapist Effects

	Total IRT Sessions				**Total IRT Sessions** (with covariates)			
Predictor Variable	Est.	SE	t	p	Est.	SE	t	p
VTAS – Between-Therapist Effect	1.44	.813	1.77	.080	.123	.706	.17	.862
VTAS – Within-Therapist Effect	.574	.351	1.64	.104	.117	.312	.37	.709

Note. Est. = Estimate; SE = Standard Error; VTAS = Vanderbilt Therapeutic Alliance Scale; IRT = Individual Resiliency Training. There was no missing data for this outcome, thus the entire alliance sample was included (*n*=144). Four covariates (months in study at VTAS assessment, permanent change in therapist [0=did not change, 1=changed), number of supported employment/education sessions, number of family psychoeducation sessions) were included in the indicated models. Between-therapist effect = average therapist VTAS scores; Within-therapist effect = client VTAS score - his/her therapist's average VTAS score.

Figure 1

Flowchart of Inclusion in Present Study



APPENDIX: VANDERBILT THERAPEUTIC ALLIANCE SCALE (VTAS) – SHORT FORM

1. To what extent did the client indicate that he experiences the therapist as supporting and understanding?

2. To what extent did the client seem to identify with the therapist's method of working, so that he sees himself as an active participant in therapy?

3. To what extent did the client act in a mistrustful or defensive manner toward the therapist?

4. To what extent did the therapist and client together share a common viewpoint about the definition, possible causes, and potential alleviation of the client's problems?

5. To what extent did the therapist and client together agree upon the goals and/or tasks of the session?

Note. Items are rated from 0-5 using the associated rating manual (Item 3 is reverse scored). Items 1 and 3 represent the bond aspect of the alliance, item 2 represents the tasks aspect of the alliance, item 4 represents the goals aspect of the alliance, and item 5 represents both goals and tasks.

ENDNOTES

[1]Post-hoc analyses were conducted in order to examine the extent to which client and therapist variability in the alliance are associated with the four QLS subscales: role functioning, interpersonal relationships, intrapsychic foundations, common objects and activities. We examined the impact of therapist and client variability utilizing the same data analytic strategy described in aim two. Results demonstrated that client variability was significantly and positively associated with role functioning ($t[71]=2.70$, $p=.009$) and both client ($t[84]=3.01$, $p=.004$) and therapist ($t[56]=2.08$, $p=.042$) variability were significantly and positively associated with intrapsychic foundations at 24 months controlling for baseline and the four covariates. Neither client nor therapist variability were significantly related to the interpersonal relationships or common objects and activities subscales.

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