

THE THERAPEUTIC ALLIANCE IN INTEGRATED COPING AWARENESS THERAPY

Rachel C. Maku Orleans-Pobee

A thesis submitted to the faculty at the University of North Carolina at Chapel Hill in partial fulfillment of the requirements for the degree of Master of Arts in the Department of Psychology and Neuroscience.

Chapel Hill  
2020

Approved by:

David L. Penn

Don H. Baucom

Erica H. Wise

© 2020  
Rachel C. Maku Orleans-Pobee  
ALL RIGHTS RESERVED

## **ABSTRACT**

Rachel Maku C. Orleans-Pobee: The Therapeutic Alliance in Integrated Coping Awareness Therapy  
(Under the direction of David L. Penn)

The therapeutic alliance (TA) is a crucial component of psychotherapy, but few studies have examined TA in specialized interventions for first-episode psychosis (FEP). This study examined the role of TA (rated by clients, therapists, and independent observers) in the context of a novel FEP intervention. Demographic and clinical variables were examined as potential predictors of TA, and the relationship between TA and treatment outcomes was examined. Client-rated TA was higher than therapist-rated TA, and TA did not differ between treatment conditions. Younger age and lower baseline symptom severity predicted stronger client-rated TA. Lastly, stronger client-rated TA predicted lower post-treatment symptom severity. Results suggest that client-rated TA predicts treatment outcomes in this population more than therapist- or observer-rated TA, and that client-rated TA may also be more sensitive to demographic and clinical predictors. These findings expand our understanding of the role of TA in FEP interventions, enhancing treatment for this population.

## TABLE OF CONTENTS

|                                     |      |
|-------------------------------------|------|
| LIST OF TABLES .....                | vii  |
| LIST OF ABBREVIATIONS.....          | viii |
| CHAPTER 1: INTRODUCTION.....        | 1    |
| CHAPTER 2: METHOD .....             | 6    |
| Recruitment and Participants .....  | 6    |
| I-CAT Intervention.....             | 6    |
| Measures.....                       | 7    |
| Positive and Negative Symptoms..... | 7    |
| Perceived Stress.....               | 8    |
| Quality of Life.....                | 8    |
| Therapeutic Alliance .....          | 8    |
| Procedures .....                    | 9    |
| General Procedures .....            | 9    |
| TA Observer Rating Procedure .....  | 9    |
| Data Analytic Plan .....            | 11   |
| Preliminary Analyses.....           | 11   |
| Aim 1 .....                         | 11   |
| Aim 2.....                          | 12   |
| Aim 3 .....                         | 12   |

|                                |    |
|--------------------------------|----|
| CHAPTER 3: RESULTS.....        | 13 |
| Demographics.....              | 13 |
| Preliminary Analyses .....     | 13 |
| Internal Consistency .....     | 13 |
| Construct Validity .....       | 13 |
| Aim 1.....                     | 14 |
| Aim 2.....                     | 15 |
| Client-Rated TA .....          | 15 |
| Therapist-Rated TA.....        | 15 |
| Observer-Rated TA .....        | 15 |
| Aim 3.....                     | 15 |
| PSS .....                      | 16 |
| QLS .....                      | 16 |
| PANSS.....                     | 16 |
| Attendance.....                | 16 |
| Exploratory Analyses .....     | 16 |
| Aim 2 (Post-hoc Analyses)..... | 16 |
| Aim 3 (Post-hoc Analyses)..... | 17 |
| Positive Symptoms .....        | 17 |
| Negative Symptoms .....        | 17 |
| Disorganization .....          | 18 |
| Excitement .....               | 18 |
| Emotional Distress .....       | 18 |
| CHAPTER 4: DISCUSSION.....     | 19 |

|                              |    |
|------------------------------|----|
| CHAPTER 5: CONCLUSIONS ..... | 26 |
| APPENDIX: WAI-O-SF.....      | 27 |
| REFERENCES .....             | 33 |

## LIST OF TABLES

|  |    |
|--|----|
| Table 1. Demographic Information and Outcome Measures..... | 30 |
| Table 2. Therapeutic Alliance Ratings.....                 | 31 |
| Table 3. Correlations Between TA Variables.....            | 32 |

## LIST OF ABBREVIATIONS

|          |   |
|----------|---|
| CBT      | Cognitive behavioral therapy                              |
| CFA      | Confirmatory factor analysis                              |
| FEP      | First-episode psychosis                                   |
| I-CAT    | Integrated Coping Awareness Therapy                       |
| ICC      | Intra-class coefficient                                   |
| OASIS    | Outreach and Support Intervention Services                |
| PANSS    | Positive and Negative Syndrome Scale                      |
| PSS      | Perceived Stress Scale                                    |
| QLS      | Quality of Life Scales                                    |
| SCID     | Structured Clinical Interview for DSM-IV                  |
| TA       | Therapeutic alliance                                      |
| TAU      | Treatment as usual  |
| WAI-C-SF | Working Alliance Inventory, Client Version, Short Form    |
| WAI-O-SF | Working Alliance Inventory, Observer Version, Short Form  |
| WAI-SF   | Working Alliance Inventory, Short Form                    |
| WAI-T-SF | Working Alliance Inventory, Therapist Version, Short Form |
| WASI     | Wechsler Abbreviated Scale of Intelligence                |



## CHAPTER 1: INTRODUCTION

The relationship between client and therapist, widely referred to as the therapeutic alliance (TA), has long been recognized as a crucial component of psychological treatment. According to the pan-theoretical model, the TA comprises three features: goals, tasks, and bonds, that jointly define the nature and strength of the alliance (Bordin, 1979). As such, a strong therapeutic alliance is said to occur when the client and therapist share a mutual understanding regarding the goals of treatment and the tasks necessary to achieve these goals, and are able to develop an open, trusting, and supportive relationship (Bordin, 1979; Elvins & Green, 2008, Horvath & Luborsky, 1993). Meta analyses consistently reveal a modest association between the TA and outcome, such that a stronger alliance predicts positive outcomes (Horvath & Symonds, 1991; Horvath et al., 2011; Martin, Garske, & Davis, 2000; McLeod, 2011). This alliance-outcome association is maintained across a number of theoretical orientations, regardless of the type of outcome assessed (e.g., functional outcome, symptom severity, termination status) or the source of alliance ratings (e.g., client or therapist) (Krupnick et al., 1996; Martin et al., 2000). Such findings support the theory that the TA plays a crucial role in shaping treatment outcome, and its pan-theoretical nature suggests the importance of understanding this alliance-outcome relationship in all types of treatment.

While the role of alliance has been explored extensively in general psychopathology, far less research has examined the role of the TA in treatment specifically for schizophrenia. In schizophrenia treatment, a stronger TA has been associated with treatment participation (Huddy et al., 2012; Startup et al., 2006), medication adherence (McCabe et al., 2012), symptom

improvement (Frank & Gunderson, 1990; Goldsmith et al., 2015), and quality of life (Catty et al., 2010; Neale & Rosenheck, 1995). Given its influence on outcomes, it is also important to identify factors that predict the strength of the therapeutic alliance in schizophrenia. However, there are inconsistent findings across studies. Specifically, baseline global functioning and work ability are significantly associated with the TA in some studies (Svensson & Hansson, 1999) but not in others (Gehrs & Goering, 1994; Neale & Rosenheck, 1995). In addition, illness-related factors such as symptom severity, depression and anxiety levels, and lack of insight are associated with weaker TA in some studies (Berry et al., 2016; Couture et al., 2006) but stronger TA in others (Barrowclough et al., 2010; Catty et al., 2011). Furthermore, findings regarding demographic predictors of TA are also inconsistent: variables such as age are associated with TA in some studies (Bielańska et al., 2016) while no such relationship is demonstrated in other studies (Davis & Lysaker, 2007).

The past two decades have shown a rise in specialized first-episode psychosis (FEP) interventions, driven by a growing literature suggesting that interventions delivered as early as possible following the emergence of psychotic symptoms can drastically impact the trajectory of the illness (Alvarez-Jiminez et al., 2011; Craig et al., 2004; Fusar-Poli et al., 2017; Kane et al., 2016; Perkins et al., 2005). Thus, FEP is considered to be a crucial point at which specialized intervention has considerable potential to influence symptom levels as well as overall functioning and quality of life (McGorry et al., 2008).

Due to the impact of specialized care during this critical period, FEP represents a distinct subgroup of schizophrenia, and understanding the role of the therapeutic alliance in FEP treatment is important (Malla & Payne, 2005). FEP interventions face a number of issues that limit treatment success: for example, FEP interventions often see high rates of non-compliance

and dropout (Doyle et al., 2014), and engagement in treatment is notoriously low in individuals with FEP (Dixon et al., 2016; MacBeth et al., 2013). These issues highlight the importance of understanding the TA within FEP treatment, given its role in treatment engagement and compliance (Lecomte et al., 2008).

Unfortunately, there exists little research examining the therapeutic alliance within the context of FEP interventions, other than that a strong TA is associated with medication adherence and engagement with services (Lecomte et al., 2008; Montreuil et al., 2012), as well as with decreased symptom severity in the context of cognitive-behavioral therapy (CBT) for psychosis (Goldsmith et al., 2015; Lecomte et al., 2012). Research in this area has also begun to examine factors that may predict the TA in FEP treatment, with a focus on client-related predictors. Such research reveals that client characteristics such as greater social functioning, greater illness insight, and lower symptom severity may be associated with a stronger TA (Berry et al., 2016; Bourdeau et al., 2009, Huddy et al., 2012). However, these conclusions are drawn from few studies. In addition, the effect of rater perspective on TA or on the alliance-outcome relationship is rarely explored: in much of the existing literature, TA is measured solely from the perspective of the client or the therapist (e.g., Bourdeau et al., 2009; Goldsmith et al., 2015), despite evidence of low convergence between client and therapist ratings (Couture et al., 2006; Wittorf et al., 2009). This is a significant limitation as it is unclear which of these perspectives is more closely related to treatment outcome.

Of the available research examining both client and therapist-rated alliance, some studies demonstrate that client-rated TA is a stronger predictor of treatment outcome than therapist-rated TA (Huddy et al., 2012; Berry et al., 2016) while others demonstrate the opposite (Gehrs & Goering, 1994). Furthermore, although observer forms are available for a number of alliance

measures, this perspective is largely unexplored in existing research, further limiting our understanding of the role of rater perspective and its utility. Specifically, observer ratings may provide greater insight into the true strength of the alliance and its association with treatment outcome (independent of client/therapist bias). Furthermore, while client and therapist ratings of TA may be influenced by other factors such as the presence of symptoms (e.g., paranoia) or improvements in functioning over the course of treatment, observer ratings are less susceptible to these influences (Browne et al., 2019).

The present study examined the TA within the context of Integrated Coping Awareness Therapy (I-CAT), a novel, individual mindfulness-based intervention aimed at reducing stress reactivity in individuals with FEP. Participants were randomized into two groups, with one group receiving I-CAT for up to 24 sessions over nine months in addition to an array of other services (i.e. Treatment as Usual; TAU); and the other group receiving treatment TAU only. The aims of the present study were as follows: First, we aimed to examine differences in client-rated, therapist-rated, and observer-rated TA across treatment conditions (i.e., differences in alliance between those receiving I-CAT and those receiving TAU). While a small number of previous studies have examined differences in TA across treatment conditions, none of these studies have involved mindfulness-based treatment for FEP. Second, given the impact of the TA on treatment outcome, the current study sought to explore whether demographic variables (e.g., age, gender, race) and clinical variables (e.g., symptom severity) predicted TA. Based on previous findings (Berry et al., 2016; Hamann et al., 2007), we hypothesized that lower overall symptom severity would be significantly associated with a stronger TA. Third, the alliance-outcome relationship was examined using client-rated, therapist-rated, and observer-rated TA. Specifically, outcome measures of interest included self-reported stress and quality of life (primary and secondary

outcome measures of the parent study), psychiatric symptoms (a common outcome measure in existing research), and session attendance (as a proxy for engagement). We hypothesized that stronger TA would be associated with lower stress, greater quality of life, lower symptom severity, and higher attendance rates.

## **CHAPTER 2: METHOD**

### **Recruitment and Participants**

Thirty eight individuals with schizophrenia spectrum disorders were recruited for a randomized controlled trial comparing I-CAT and TAU. Participants were recruited from Outreach and Support Intervention Services (OASIS), an outpatient clinic of the University of North Carolina (UNC) Department of Psychiatry, as well as from the surrounding Chapel Hill community. Nineteen participants were assigned to receive I-CAT + TAU, and 19 participants were assigned to TAU (typically consisting of medication and case management services). All participants met the following inclusion criteria: (a) met DSM IV criteria for schizophrenia or schizoaffective disorder according to the Structured Clinical Interview for DSM-IV (SCID); (b) had received less than eight years of antipsychotic and/or psychological treatment for psychosis; (c) between the ages of 15 and 35, (d) IQ score of 80 or above as determined by the Wechsler Abbreviated Scale of Intelligence (WASI; Wechsler, 1999); (e) did not meet criteria for current substance dependence; (f) no hospitalizations in the month prior to beginning the study; (g) were not actively practicing meditation (i.e., the participant was not taking a workshop and had not been practicing meditation in the past year); (h) experiencing significant stress (i.e., earned a score of 4 or above on Clinician Reported Stress Scale and/or a score of 15 or above on the self-rated Perceived Stress Scale); and (i) willing and able to provide informed consent.

### **I-CAT Intervention**

I-CAT is an individual therapy program for persons recovering from an initial psychotic episode. The I-CAT program is based on two core elements: in vivo practice of mindfulness and

meaningful coping strategies, and development of an individualized plan for changing the biological stress response. The treatment is designed to cover 24 sessions, with clients meeting for 50 minutes once per week for sessions 1-16, and then meeting every other week for the final 8 sessions. The structure of I-CAT consists of three major sections. Part I (completed in the first two sessions) focuses on providing a general overview of the I-CAT program, developing goals for treatment, examining each participant's unique stressors, and identifying ways in which mindfulness and positive psychology strategies could be used to mitigate the negative effects of these stressors. In Part II (sessions 3-13) instruction is provided in specific mindfulness exercises and meaningful coping strategies, with each exercise broken down into small steps and practiced in session. Part III (sessions 14-24) focuses on developing an individualized plan to address environmental stressors, utilizing a specific set of strategies determined by the client. Clinicians worked with the clients to reinforce the individualized plan and to expand its applications to various types of scenarios and social interactions. Generally, Parts I and II of the intervention focused on exposing the client to various skills and strategies, while Part III focused on helping the client develop expertise in a specific set of these strategies. Study clinicians included two full-time psychotherapists from the OASIS community clinic, eight masters-level graduate students at UNC, and three masters-level graduate students at the University of Minnesota.

## **Measures**

### ***Positive and Negative Symptoms***

Symptoms were assessed with the Positive and Negative Syndrome Scale (PANSS; Kay et al., 1992). This interview yields a total score as well as five factors: positive symptoms, negative symptoms, disorganization, excitement, and emotional distress (van der Gaag et al., 2006). For the study's primary aims, the total score was utilized to assess symptom severity.

Exploratory analyses included the five factor scores in order to further examine the relationship between TA and specific domains of symptoms.

### ***Perceived Stress***

The Perceived Stress Scale (PSS; Cohen, Kamarck, & Mermelstein, 1983) was used to measure self-reported stress. The PSS is a 10-item measure that assesses the degree to which an individual's lives are appraised as stressful. The measure was designed for use in community samples and demonstrates strong psychometric properties (Cohen et al., 1983).

### ***Quality of Life***

Quality of life was assessed with the Quality of Life Scales (QLS; Heinrichs, Hanlon, & Carpenter, 1984). The QLS is a semi-structured interview that evaluates interpersonal relations, role functioning, affective and cognitive functioning, and engagement with common objects and activities. Items are rated on a 7-point scale, with lower scores representing greater impairments in quality of life and functioning, and higher scores representing greater quality of life and higher levels of functioning. The total score was used in analyses to provide an estimation of overall quality of life across all domains.

### ***Therapeutic Alliance***

TA was assessed using client, therapist, and observer versions of the Working Alliance Inventory, Short Form (WAI-SF; Horvath & Greenberg, 1989; see appendix). Items are rated on a Likert scale ranging from 1 (never) to 7 (always). Client-rated TA was assessed using the client version of the 12-item short form (WAI-C-SF), while therapist-rated TA was assessed using the therapist version (WAI-T-SF). Both client and therapist ratings were completed at mid-treatment; procedures for obtaining observer ratings are described subsequently. Because no short form of the observer version was previously available, a modified short form (WAI-O-SF) was created



comprising only the items from the full 36-item measure that correspond to the 12 items in the WAI-C-SF and the WAI-T-SF. The WAI-SF reflects the pan-theoretical conceptualization of TA (Bordin, 1979): all three versions of the measure include four items assessing agreement on goals (e.g., “\_\_\_ and I are working toward mutually agreed upon goals”), four items assessing agreement on tasks (e.g., “we agree on what is important for me to work on”), and four items assessing the bond (e.g., “\_\_\_ and I trust one another”). The measure yields three subscale scores (Goals, Tasks, and Bond) as well as a total score. Because each subscale is comprised of only four items and yields lower reliability estimates than the total score (Hanson et al., 2002), the total score was used for analyses, with higher scores indicating stronger TA.

## **Procedures**

### ***General Procedures***

All participants first completed a screening session, during which eligibility was determined according to the inclusion criteria described previously. Demographic information was also collected during the screening visit. After eligibility was established, participants were assigned to one of the two treatment groups using a randomization plan stratified by participant gender. Assessments were completed at baseline, mid-treatment (i.e., approximately 12 weeks into treatment, or 4.5 months after beginning treatment if 12 sessions were not yet completed by this time), post-treatment, and three-month follow up. Attendance for each participant was recorded by study clinicians, and was calculated as the percentage of sessions attended out of the total number of sessions scheduled.

### ***TA Observer Rating Procedure***

All observer ratings of TA were completed by three trained undergraduate research assistants after listening to an audio recording of the session that took place closest to the mid-

treatment assessment (approximately 12 weeks into treatment). All research assistants were blind to treatment condition, and ratings were made independently. Research assistants completed several training sessions led by a doctoral student (the gold-standard rater). In the first stage of training, raters reviewed the Working Alliance Inventory manual and discussed criteria for each possible score, and then rated two I-CAT sessions together with the gold-standard rater. Next, research assistants rated three I-CAT sessions independently, and discussed these scores during a subsequent meeting in which discrepancies were examined in detail and rating criteria were clarified. In the third and final stage of training, the research assistants were required to rate five more I-CAT sessions independently. These ratings were then used to calculate inter-rater reliability, and all raters were required to reach an adequate reliability with the other raters (including the gold-standard rater). Training continued until high intra-class coefficients (ICCs) were reached (i.e., .7 or above), as is consistent with training protocols in previous studies using observer forms of the Working Alliance Inventory (Adler et al., 2018).

A protocol was established such that a randomly selected 10% of the total ratings from each research assistant was used to calculate rater drift. For these sessions, the gold-standard rater also provided a TA rating, and ICCs were calculated among the four raters. If ICCs were considered unacceptable (i.e., less than .7), all discrepancies would be discussed with the three research assistants and the gold-standard rater, and upon reaching a consensus, the original scores would be replaced by this new score. For the four randomly-selected ratings, ICC estimates were calculated based on a single-rating, absolute-agreement, two-way random-effects model. ICCs demonstrated acceptable inter-rater reliability [ICC = .704, 95% CI = .349-.943,  $p < .001$ ]. Thus, it was not necessary to replace any of the WAI-O-SF scores to account for rater drift.

## **Data Analytic Plan**

### ***Preliminary Analyses***

A three-factor confirmatory factor analysis (CFA) was conducted on the WAI-O-SF measure, to examine the construct validity of the newly created short form. The three components of TA (goals, tasks, and bond) were included in this model as latent variables. At the first-order level, factor loadings of items on the goals (items 4, 6, 10, and 11), tasks (items 1, 2, 8, and 12), and bond (items 3, 5, 7, and 9) were used to examine the validity of the latent variables. At the second-order level, correlations between total scores from goal-related items, task-related items, and bond-related items were examined. Although the analysis of individual subscale scores is beyond the scope of the proposed study's aims and thus subscale scores were not be utilized, this confirmatory factor analysis is crucial as it allows us to determine whether the WAI-O-SF indeed captures the same construct as the WAI-C-SF and the WAI-T-SF. Cronbach's alphas for the WAI-C-SF, the WAI-T-SF, and the WAI-O-SF total scores were also computed to determine the validity of the instrument in this sample.

***Aim 1: To Investigate Differences In TA Across Treatment Conditions (i.e., ICAT + TAU versus TAU alone).***

To investigate differences in TA between those receiving I-CAT and those receiving TAU, independent-samples *t*-tests were conducted. Additionally, client-rated, therapist-rated, and observer-rated TA for the total sample were compared to one another using paired-samples *t*-tests. If no significant differences were found between client-rated, therapist-rated, and observer-rated TA, we planned to convert the three ratings to *z* scores and combine them into a composite score for each participant, to be used in subsequent analyses. Group differences with regard to age, race, gender, and baseline PANSS total score were also examined, so that variables that

showed significant differences across groups could be included as covariates in subsequent analyses.

***Aim 2: To Explore Demographic and Clinical Predictors Of TA***

To address the second aim, linear regression was used to examine predictors of client, therapist, and observer-rated TA. Demographic and clinical variables (age, race, gender, baseline PANSS total score) were entered as predictors into three multi-level models. In the first model, the outcome measure was client-rated TA; in the second model, the outcome measure was therapist-rated TA; and in the third model, the outcome measure was observer-rated TA. If significant differences were not found between the three TA ratings, the four predictors would instead be entered in a single model, using the composite TA score as the outcome measure.

***Aim 3: To Examine the Relationship Between TA and Treatment Outcomes***

The third aim was addressed using linear regression to examine the effects of client, therapist, and observer-rated TA on treatment outcomes. Client, therapist, and observer TA ratings were entered simultaneously as predictors in each model, while outcome variables at post-treatment (PSS, QLS, PANSS total score, and number of sessions attended) were examined in separate linear models. Each model also controlled for baseline levels of the outcome of interest.

## CHAPTER 3: RESULTS

### Demographics

Thirty eight participants were recruited for the study. Participants who withdrew from the study were removed from analyses ( $n=2$ ), as well as those for whom client, therapist, and observer ratings of TA were missing ( $n=4$ ), resulting in a sample size of 32 participants. Participants were mostly female (53.1%), and mean age was 24.06 years ( $SD=4.21$  years). The majority of participants were Caucasian (56.3%), with 18.8% African-American, 9.4% Asian, 6.3% Native American, and 9.4% Caucasian/Hispanic. Given the low number of participants in each racial group, race was analyzed as a dichotomous variable with two groups: Caucasian and non-Caucasian (see Table 1).

### Preliminary Analyses

#### *Internal consistency*

Reliability analyses were conducted on the three WAI short forms, each comprising 12 items. Cronbach's alphas for each measure demonstrated that each measure reached excellent internal consistency;  $\alpha = .930$  (WAI-C-SF),  $.913$  (WAI-T-SF), and  $.941$  (WAI-O-SF).

#### *Construct validity*

CFA was used to examine construct validity of the WAI-O-SF by fitting a three-factor structure. The three-factor model demonstrated adequate fit ( $RMSEA = .14$ ,  $CFI = .87$ ). Evaluation of model fit was informed by multiple model fit indices and theoretical considerations (i.e., existing support for the the pan-theoretical model of TA), rather than a single criterion (Bentler, 2007). Taking into consideration the theoretical justification for the three-

factor structure of the WAI-O-SF, as well as the possible effects of small sample size in these analyses, the WAI-O-SF was considered to have demonstrated appropriate construct validity for this study.

### **Aim 1: To Investigate Differences in TA Across Treatment Conditions**

To investigate differences in TA between those receiving I-CAT and those receiving TAU, independent-samples *t*-tests were conducted. There were no significant differences between those in the I-CAT and TAU groups in client-rated TA [ $t(28) = .796, p=.433$ ], therapist-rated [ $t(22) = .111, p=.913$ ], or observer-rated TA [ $t(23) = .990, p=.332$ ].

Additionally, client-rated, therapist-rated, and observer-rated TA for the total sample (i.e., collapsing across treatment groups) were compared to one another using paired-samples *t*-tests. Client-rated TA ( $M = 71.92, SD=10.96$ ) was significantly higher than therapist-rated TA ( $M=66.54, SD=7.91$ );  $t(23)=2.32; p=.030$ . There were no significant differences between client-rated and observer-rated TA [ $t(22)= 2.06, p=.051$ ], nor between therapist-rated and observer-rated TA [ $t(18)= 1.01, p=.324$ ]<sup>1</sup> (see Table 2). However, the three TA variables were not significantly correlated with one another (see Table 3). Given that client-rated TA was significantly higher than therapist-rated TA, the three TA ratings were examined separately in all subsequent analyses. Lastly, group differences with regard to demographic and clinical variables (age, race, gender, and baseline PANSS total) were examined. The I-CAT and TAU groups did

---

<sup>1</sup>Mean scores for client-rated, therapist-rated, and observer-rated TA as reported in the text are based on the number of participants for whom data was available for the two variables in a given comparison (i.e., client and therapist, client and observer, or therapist and observer). Due to missing data, this resulted in the following sample sizes:  $N=24$  for client and therapist;  $N=23$  for client and observer, and  $N=19$  for therapist and observer. As such, these means do not reflect those reported in Table 1, which are computed using the full set of data available for each variable.

not differ significantly in any of the demographic or clinical variables (see Table 1).

### **Aim 2: To Explore Demographic and Clinical Predictors Of TA**

Age, race, gender, and baseline PANSS total score were entered as predictors into three linear regression models, using client-rated TA, therapist-rated TA, and observer-rated TA as dependent variables.

#### ***Client-rated TA***

Age was a significant predictor of client-rated TA, such that higher age was associated with lower client-rated TA [ $t(29) = -.399, p = .023$ ]. Baseline PANSS total score also significantly predicted client-rated TA, such that higher PANSS score was associated with lower client-rated TA [ $t(29) = -.394, p = .039$ ]. Neither gender nor race significantly predicted client-rated TA.

#### ***Therapist-rated TA***

Neither age, race, gender, nor baseline PANSS score significantly predicted therapist-rated TA.

#### ***Observer-rated TA.***

Neither age, race, gender, nor baseline PANSS score significantly predicted observer-rated TA.

### **Aim 3: To Examine the Relationship Between TA and Treatment Outcomes**

Client, therapist, and observer TA ratings were entered simultaneously as predictors in four separate linear regression models with outcome variables stress (PSS), quality of life (QLS), post-treatment symptoms (PANSS total score), and attendance, respectively. All models accounted for baseline measures of the outcome when applicable (i.e., with the exception of attendance; see Table 1). Additionally, all models accounted for treatment condition, given the expected effects of treatment condition on outcomes.

### ***PSS***

Neither client-rated, therapist-rated, nor observer-rated TA significantly predicted post-treatment PSS total score.

### ***QLS***

Neither client-rated, therapist-rated, nor observer-rated TA significantly predicted post-treatment QLS total score.

### ***PANSS***

Client-rated TA was a significant predictor of PANSS total score at post-treatment, such that higher TA was associated with lower PANSS total score [ $t(17) = -2.61, p=.023$ ]. Neither therapist-rated nor observer-rated TA significantly predicted post-treatment PANSS total score.

### ***Attendance***

Neither client-rated, therapist-rated, nor observer-rated TA significantly predicted attendance.

### **Exploratory Analyses**

In order to avoid potentially obscuring results by collapsing across the PANSS factors, analyses for aims 2 and 3 were repeated based on the van der Gaag five-factor model (van der Gaag et al., 2006). The five factors are Positive Symptoms, Negative Symptoms, Disorganization, Excitement, and Emotional Distress.

#### ***Aim 2 (post-hoc analyses): Demographic and clinical predictors of TA***

Baseline positive symptoms, negative symptoms, disorganization, excitement, and emotional distress were entered as predictors into three separate regression models (in addition to demographic variables age, gender, and race), with client-rated TA, therapist-rated TA, and observer-rated TA as dependent measures.



With regard to client-rated TA, the negative symptoms factor was a marginally significant predictor of TA, such that higher levels of negative symptoms at baseline predicted worse client-rated TA [ $t(21)=-2.07, p=.051$ ].

In terms of therapist-rated TA, the excitement factor significantly predicted TA, such that higher baseline levels of excitement symptoms predicted worse TA [ $t(23)=-3.33, p=.005$ ]. Additionally, the emotional distress factor was a significant predictor, such that higher baseline levels of emotional distress predicted better therapist-rated TA [ $t(23)=3.00, p=.009$ ]. Lastly, none of the five factors significantly predicted observer-rated TA.

***Aim 3 (post-hoc analyses): Relationship between TA and treatment outcomes***

Client-rated TA, therapist-rated TA, and observer-rated TA were entered simultaneously into five separate regression models. The dependent measures were the five factors of the PANSS at post-treatment: Positive Symptoms, Negative Symptoms, Disorganization, Excitement, and Emotional Distress. Each model controlled for treatment condition, as well as for baseline scores on the PANSS subscale.

**Positive symptoms.** Neither client-rated, therapist-rated, nor observer-rated TA significantly predicted PANSS positive symptoms.

**Negative symptoms.** Client-rated TA was a significant predictor of PANSS negative symptoms, such that higher client-rated TA was associated with lower PANSS negative symptoms,  $t(17)=-2.47, p=.029$ . Neither therapist-rated nor observer-rated TA significantly predicted PANSS negative symptoms.

**Disorganization.** Neither client-rated, therapist-rated, nor observer-rated TA significantly predicted PANSS disorganized symptoms.

**Excitement.** Neither client-rated, therapist-rated, nor observer-rated TA significantly predicted PANSS excitement.

**Emotional distress.** Client-rated TA was a significant predictor of PANSS emotional distress, such that higher client-rated TA was associated with lower PANSS emotional distress;  $t(17)=-2.66, p=.021$ . Neither therapist-rated nor observer-rated TA significantly predicted PANSS emotional distress.

## CHAPTER 4: DISCUSSION

The present study sought to examine the role of TA in the novel I-CAT intervention, by (a) examining differences between TA in the I-CAT and TAU conditions, (b) comparing TA as rated by the client, therapist, and independent observer, (c) examining clinical and demographic predictors of TA, and (d) assessing the relationship between TA and treatment outcomes.

With regard to aim 1, we found no significant differences in TA between the I-CAT and TAU groups. These findings are expected given the context of the parent study, in which differences in TA between treatment conditions could represent an extraneous variable. That is, the present study took place in the context of a randomized controlled trial, in which efforts were made to minimize differences between the two treatment conditions (i.e. by encouraging all clinicians to build and maintain a TA with their clients). Such findings also offer promising clinical implications: despite many clinicians' concerns that manual-guided treatment may undermine the strength of the TA (Addis & Krasnow, 2000; Stewart et al., 2012), these findings indicate that the use of treatment manuals does not necessarily impair TA (Langer et al., 2011).

In terms of the TA rater perspective, client-rated TA was significantly higher than therapist-rated TA; no other differences were found between TA raters. This pattern in which clients tend to rate the TA higher than therapists may be due in part to the fact that therapists experience a greater number of therapeutic relationships than clients, and may therefore perceive the TA to be lower in comparison to other previous therapeutic relationships (Tryon et al., 2007). Indeed, findings of the present study align closely with previous research: studies examining TA from both the client and therapist perspectives have generally found client-rated TA to be higher

than therapist-rated TA (e.g., Berry et al., 2016; Davis & Lysaker, 2004; Evans-Jones et al., 2009; Fitzpatrick et al., 2005). In addition, the lack of significant differences between observer-rated TA and client-rated/therapist rated TA is notable given that discrepancies between TA raters are common (Browne, Nagendra, et al., 2019). Findings of the present study indicate that observer ratings may offer an account of the therapeutic relationship that is similar to that of the individuals involved in the relationship and is internally valid.

The second aim examined clinical and demographic predictors of TA, and found that younger age predicted better TA from the client's perspective. These findings align in part with extant literature suggesting that younger age is associated with better client-rated TA (Bielanska et al., 2016). However, there is also mixed evidence to support this relationship, with a number of studies reporting contrary findings such that older age is associated with better client-rated TA (Johansen, Iversen, et al., 2013; Johansen, Melle, et al., 2013; McCabe & Priebe, 2003), although these studies are based on inpatient, rather than outpatient samples. Moreover, though the present study did not collect demographic information from therapists, the majority of therapists (11 out of 13) were graduate students, a population that tends to be younger in age. As the majority of clients were young adults ( $M=24.06$  years,  $SD=4.21$  years), it is possible that younger clients were, on average, closer in age to their therapists and therefore were able to develop a stronger alliance in the context of a more peer-like relationship.

Baseline symptom severity was also a significant predictor of client-rated TA, such that lower PANSS total score (i.e., lower symptomatology) was associated with better TA. While these findings offer partial support for the study hypotheses, it is notable that this relationship was demonstrated only with regard to client-rated TA, and not therapist-rated or observer-rated TA. However, these findings are unsurprising given that only client-related factors were

examined as potential predictors of TA. As such, it is possible that the client's characteristics most strongly influence the client's perception of the therapeutic relationship, rather than that of the therapist or an independent observer.

Exploratory analyses examined five domains of symptom severity (positive symptoms, negative symptoms, disorganization, excitement, and emotional distress) as predictors of TA and found that lower levels of negative symptoms predicted better client-rated TA. Such findings are promising given the impact of negative symptoms on real-world functioning in individuals with schizophrenia (Foussias et al., 2014; Hunter & Barry, 2012; Rabinowitz et al., 2012), making negative symptoms a prominent treatment target in this population.

In terms of therapist-rated TA, higher baseline scores on the excitement factor predicted worse TA, while conversely, higher scores on the emotional distress factor predicted better therapist-rated TA. Although the relationship between emotional distress and therapist-rated TA may be counter-intuitive, it is possible that when therapists observed higher emotional distress (e.g., guilt feelings, preoccupation), they addressed goals and tasks more explicitly in order to better understand these more general, overarching symptoms, thus enhancing TA overall

These findings must also be placed within the context of existing literature examining correlates and predictors of therapist-rated TA, which has yielded largely mixed results.

Although most research suggests that more severe symptoms predict worse TA, including studies that have examined specific symptom domains using the PANSS (e.g., Hamann et al., 2007; Widschwendter et al., 2016), there also exists a small number of studies who report findings in the opposite direction, such that higher symptom severity predicts better alliance (Barrowclough et al., 2010; Catty et al., 2011). To explain such findings, Catty et al. (2011) propose that higher symptom severity may promote a sense of dependency on the clinician, which could then be

misinterpreted by the clinician as stronger TA. Excitement symptoms may be particularly salient to clinicians, as the items that comprise this factor are often difficult to ignore (e.g., uncooperativeness, physical tension). In such cases, it may be useful for clinicians to explicitly discuss the nature of the therapeutic relationship with their clients, particularly when clients endorse higher levels of psychiatric symptoms.

Lastly, we examined the relationship between TA and treatment outcomes. We hypothesized that stronger client-rated, therapist-rated, and observer-rated TA would be associated with lower subjective stress, higher quality of life, lower symptom severity, and higher attendance at the end of treatment. Our results indicate that client-rated TA significantly predicted overall symptom severity. Neither client, therapist, nor observer rated TA significantly predicted subjective stress, quality of life, or attendance. The lack of relationship between observer-rated TA and treatment outcomes is particularly surprising; although research examining the relationship between observer-rated TA and treatment outcomes is limited, previous research suggests that observer-rated TA is associated with better quality of life and lower symptom severity in FEP treatment (Browne, Meuser, et al., 2019).

These results regarding the relationship between TA and treatment outcomes should be interpreted within the context of overall treatment effects. To this end, effect sizes (Cohen's  $d$ ) were calculated to evaluate changes in outcome measures of interest (i.e., perceived stress, quality of life, and overall symptom severity) from baseline to post-test. Results indicated moderate effect size changes in symptom severity ( $d=.61$ ), but small effect size change in perceived stress ( $d=.03$ ) and in quality of life ( $d=.28$ ). These modest effects of treatment on the outcome measures of interest may impede the ability to adequately examine the relationship between TA and treatment outcomes.

Exploratory analyses examined the relationship between TA and each of the five domains of symptom severity at post-treatment: positive symptoms, negative symptoms, disorganization, excitement, and emotional distress. Results indicated that client-rated TA significantly predicts negative symptoms and emotional distress at post-treatment, such that higher client-rated TA predicted lower negative symptoms and lower emotional distress. Neither therapist-rated nor observer-rated TA predicted positive symptoms, disorganization, or excitement. The relationship between symptom severity and client-rated TA, but not observer- or therapist-rated TA, is consistent with the pattern found when examining total symptoms, suggesting that the relationship between client-rated TA and overall symptom severity may be largely accounted for by negative symptoms and emotional distress.

The emotional distress factor appears to show a unique relationship with TA: higher levels of emotional distress at baseline predicted higher therapist-rated TA, while higher client-rated TA predicted lower emotional distress at post-treatment. It is possible that clients with more severe emotional distress symptoms stand to benefit more from treatment (at least in terms of this symptom cluster), through the mechanism of a strong therapeutic relationship. However, it is important to note that of all the observations in the present study, this is the sole case in which higher symptom severity predicts stronger TA; therefore, it is unlikely that this represents a broader pattern.

Taken together, these results indicate that client-rated TA was the only predictor of treatment outcomes in this study, and may also be the most sensitive to clinical and demographic predictors. These findings are consistent with patterns seen in client-rated TA in previous reviews, indicating that lower symptom severity is associated with better client-rated TA (Tessier et al., 2017; Wykes et al., 2013), and that client-rated TA is associated with lower total

symptoms at post-treatment (Berry et al., 2016; Jung et al., 2014). These findings also make logical sense given that clients' perceptions of various factors often impact physical and psychological outcomes more than more objective measures. For example, subjective appraisal of sleep has been more strongly linked with daytime functioning than objective measures of sleep (McCrae et al., 2005), and a substantial body of literature suggests that subjective socioeconomic status impacts various health outcomes above and beyond objective measures of socioeconomic status (Adler et al., 2000; Demakakos et al., 2008; Singh-Manoux et al., 2005). In line with such work, it is unsurprising that client-rated TA was the most important predictor of treatment outcomes in the present study.

The study was limited by the use of audiotaped sessions for observer TA ratings. Although the WAI manual and observer rater training process identified specific verbal cues that may indicate better or worse TA, many nonverbal signals, such as facial expression or body language (e.g., nodding, gesturing), remain unaccounted for. Additionally, there were thirteen study therapists; the small number of clients per therapist precluded the utilization of a nested model that accounted for multiple therapists. As such, the identity of the therapist in each client-therapist dyad may act as a confounding variable that impacts TA ratings from clients, therapists, and observers. Because TA may be influenced by therapist demographics (e.g. therapist ethnicity and/or matching of ethnicity with the client) and other therapist-related variables (e.g., trustworthiness, empathy), therapist-related characteristics represent an important, yet unexplored factor in the present study (Chao et al., 2011; Shattock et al., 2018). Lastly, the outcome measures in the present study were chosen due to their relevance to TA in extant literature and their importance in the parent study. However, it is possible that these measures



lacked the sensitivity necessary to detect treatment effects in this sample, thus limiting our ability to explore relationships between TA and treatment outcomes.

Despite these limitations, the findings presented here offer promising directions for future work in this area. First, future work may benefit from examining the effects of TA on social functioning. Given that TA reflects the nature of an important social relationship for the client, it is possible that the relationship between TA and treatment outcomes may be stronger when examining social functioning, an important target in schizophrenia treatment. Second, given the impact of client-rated TA on treatment outcomes, future work should examine in greater detail the specific factors that account for higher TA when assessed from the client perspective. For example, qualitative analyses exploring aspects of the therapeutic relationship that the client found to be most salient and/or helpful may further elucidate the nature of the client-rated TA. This could allow for more targeted approaches to strengthening TA: while there is preliminary support for efforts aimed at improving TA in schizophrenia treatment (e.g., McCabe et al., 2016; van Meijel et al., 2009), these efforts could be enhanced by a deeper understanding of the nature of client-rated TA.

## **CHAPTER 5: CONCLUSIONS**

The present study examined the role of TA in I-CAT, a mindfulness-based intervention for FEP. Overall, results indicate that client-rated TA predicts treatment outcomes better than therapist-rated or observer-rated TA in this population, and is also the most sensitive to clinical and demographic predictors. The present study offers unique insights into the role of TA, as it is the first FEP study to use client, therapist, and observer ratings to examine both predictors of TA and the relationship between TA and outcomes. However, future work in this area remains crucial. Additionally, utilizing qualitative approaches to better understand the nature of client-rated TA may inform efforts to strengthen TA, thus maximizing the benefits of treatment in this population. Both the current study and these future efforts will deepen our understanding of TA in FEP treatment, and will ultimately lead to lasting improvements in treatment of FEP.

## APPENDIX: WAI-O-SF

### Working Alliance Inventory, Short Form Form O

#### Instructions

On the following pages there are sentences that describe some of the different ways a therapist/client dyad may interact in therapy. If a statement describes the way you always (consistently) perceive the dyad, circle the number 7; if it never applies to the dyad, circle the number 1. Use the numbers in between to describe the variations between these extremes.

This questionnaire is CONFIDENTIAL; neither the therapist, client, nor the agency will see your answers.

Work fast, your first impressions are the ones we would like to see.  
(PLEASE DON'T FORGET TO RESPOND TO EVERY ITEM.)

Thank you for your cooperation.

© A. O. Horvath, 1981 1982, V. Tichenor 1989, A. O. Horvath, 1990

1. There is agreement about the steps taken to help improve the client's situation.

|        |       |        |              |           |       |            |
|--------|-------|--------|--------------|-----------|-------|------------|
| 1      | 2     | 3      | 4            | 5         | 6     | 7          |
| Always | Never | Rarely | Occasionally | Sometimes | Often | Very Often |

2. There is agreement about the usefulness of the current activity in therapy (i.e., the client is seeing new ways to look at his/her problem).

|        |       |        |              |           |       |            |
|--------|-------|--------|--------------|-----------|-------|------------|
| 1      | 2     | 3      | 4            | 5         | 6     | 7          |
| Always | Never | Rarely | Occasionally | Sometimes | Often | Very Often |

3. There is a mutual liking between the client and therapist.

|        |       |        |              |           |       |            |
|--------|-------|--------|--------------|-----------|-------|------------|
| 1      | 2     | 3      | 4            | 5         | 6     | 7          |
| Always | Never | Rarely | Occasionally | Sometimes | Often | Very Often |

4. There are doubts or a lack of understanding about what participants are trying to accomplish in therapy.

|        |       |        |              |           |       |            |
|--------|-------|--------|--------------|-----------|-------|------------|
| 1      | 2     | 3      | 4            | 5         | 6     | 7          |
| Always | Never | Rarely | Occasionally | Sometimes | Often | Very Often |

5. The client feels confident in the therapist's ability to help the client.

|        |       |        |              |           |       |            |
|--------|-------|--------|--------------|-----------|-------|------------|
| 1      | 2     | 3      | 4            | 5         | 6     | 7          |
| Always | Never | Rarely | Occasionally | Sometimes | Often | Very Often |

6. The client and therapist are working on mutually agreed upon goals.

|        |       |        |              |           |       |            |
|--------|-------|--------|--------------|-----------|-------|------------|
| 1      | 2     | 3      | 4            | 5         | 6     | 7          |
| Always | Never | Rarely | Occasionally | Sometimes | Often | Very Often |

7. The client feels that the therapist appreciates him/her as a person.

|        |       |        |              |           |       |            |
|--------|-------|--------|--------------|-----------|-------|------------|
| 1      | 2     | 3      | 4            | 5         | 6     | 7          |
| Always | Never | Rarely | Occasionally | Sometimes | Often | Very Often |

8. There is agreement on what is important for the client to work on.

|        |       |        |              |           |       |            |
|--------|-------|--------|--------------|-----------|-------|------------|
| 1      | 2     | 3      | 4            | 5         | 6     | 7          |
| Always | Never | Rarely | Occasionally | Sometimes | Often | Very Often |

9. There is mutual trust between the client and therapist.

|        |       |        |              |           |       |            |
|--------|-------|--------|--------------|-----------|-------|------------|
| 1      | 2     | 3      | 4            | 5         | 6     | 7          |
| Always | Never | Rarely | Occasionally | Sometimes | Often | Very Often |

10. The client and therapist have different ideas about what the client's real problems are.

|        |       |        |              |           |       |            |
|--------|-------|--------|--------------|-----------|-------|------------|
| 1      | 2     | 3      | 4            | 5         | 6     | 7          |
| Always | Never | Rarely | Occasionally | Sometimes | Often | Very Often |

11. The client and therapist have established a good understanding of the changes that would be good for the client.

|        |       |        |              |           |       |            |
|--------|-------|--------|--------------|-----------|-------|------------|
| 1      | 2     | 3      | 4            | 5         | 6     | 7          |
| Always | Never | Rarely | Occasionally | Sometimes | Often | Very Often |

12. The client believes that the way they are working with his/her problem is correct.

|        |       |        |              |           |       |            |
|--------|-------|--------|--------------|-----------|-------|------------|
| 1      | 2     | 3      | 4            | 5         | 6     | 7          |
| Always | Never | Rarely | Occasionally | Sometimes | Often | Very Often |

Table 1. Demographic Information and Outcome Measures

|   | I-CAT<br>(n=17) | TAU<br>(n=15) | All Participants<br>(n=32) |
|---|-----------------|---------------|----------------------------|
| Age (years), M (SD)                     | 23.59 (4.21)    | 24.60 (4.29)  | 24.06 (4.21)               |
| Gender (Male), n (%)                    | 9 (52.9)        | 6 (40)        | 15 (46.9)                  |
| <b>Race</b>                             |                 |               |                            |
| Caucasian, n (%)                        | 8 (47.1)        | 10 (66.7)     | 18 (56.3)                  |
| Non-Caucasian, n (%)                    | 9 (52.9)        | 5 (33.3)      | 14 (43.8)                  |
| Attendance, %                           | 92.25           | 94.38         | 93.35                      |
| <b>PSS Total, M (SD)</b>                |                 |               |                            |
| BL                                      | 14.86 (5.10)    | 16.09 (9.02)  | 15.40 (6.95)               |
| PT                                      | 15.00 (6.19)    | 14.69 (6.17)  | 14.87 (6.07)               |
| <b>QLS Total, M (SD)</b>                |                 |               |                            |
| BL                                      | 26.06 (8.61)    | 25.20 (8.09)  | 25.66 (8.25)               |
| PT                                      | 28.56 (10.76)   | 28.31 (7.39)  | 28.45 (9.24)               |
| <b>PANSS Total, M (SD)</b>              |                 |               |                            |
| BL                                      | 61.94 (17.36)   | 58.73 (17.62) | 60.44 (17.27)              |
| PT                                      | 50.13 (17.94)   | 51.46 (13.66) | 50.72 (15.90)              |
| <b>PANSS Positive Symptoms, M (SD)</b>  |                 |               |                            |
| BL                                      | 20.18 (7.58)    | 20.40 (7.66)  | 20.28 (7.49)               |
| PT                                      | 16.75 (8.37)    | 16.85 (6.69)  | 16.79 (7.53)               |
| <b>PANSS Negative Symptoms, M (SD)</b>  |                 |               |                            |
| BL                                      | 19.00 (6.96)    | 17.27 (7.70)  | 18.19 (7.25)               |
| PT                                      | 15.13 (6.61)    | 16.54 (5.75)  | 15.76 (6.17)               |
| <b>PANSS Excitement, M (SD)</b>         |                 |               |                            |
| BL                                      | 11.88 (4.11)    | 12.33 (3.37)  | 12.09 (3.73)               |
| PT                                      | 10.44 (3.43)    | 10.46 (2.18)  | 10.45 (2.89)               |
| <b>PANSS Disorganization, M (SD)</b>    |                 |               |                            |
| BL                                      | 18.59 (6.93)    | 17.93 (5.92)  | 18.28 (6.38)               |
| PT                                      | 15.69 (6.07)    | 15.15 (4.04)  | 15.45 (5.18)               |
| <b>PANSS Emotional Distress, M (SD)</b> |                 |               |                            |
| BL                                      | 19.12 (6.88)    | 19.20 (5.81)  | 19.16 (6.30)               |
| PT                                      | 15.50 (6.82)    | 15.62 (5.94)  | 15.55 (6.35)               |

Note: I-CAT = Integrated Coping Awareness Therapy; TAU = treatment as usual; PANSS = Positive and Negative Syndrome Scale; PSS = Perceived Stress Scale; QLS = Quality of Life Scales

Table 2. Therapeutic Alliance Ratings

|                         | <b>I-CAT<br/>(n= 17)</b> | <b>TAU<br/>(n= 15)</b> | <b>Total<br/>(n=32)</b> |
|-------------------------|--------------------------|------------------------|-------------------------|
| <b>WAI-C-SF, M (SD)</b> | 67.35 (11.82)            | 71.0 (13.2)            | 68.93 (12.35)           |
| <b>WAI-T-SF, M (SD)</b> | 66.38 (10.37)            | 66.73 (3.85)           | 66.54 (7.91)            |
| <b>WAI-O-SF, M (SD)</b> | 62.73 (9.34)             | 66.40 (8.63)           | 64.20 (9.07)            |

*Note:* I-CAT = Integrated Coping Awareness Therapy; TAU = treatment as usual; WAI-C-SF = Working Alliance Inventory- Client Version (Short Form); WAI-T-SF = Working Alliance Inventory- Therapist Version (Short Form); WAI-O-SF = Working Alliance Inventory- Observer Version (Short Form). Mean scores for client-rated, therapist-rated, and observer-rated TA are computed using the full set of data available for each variable. As such, these means do not reflect those reported in the text, which are based on the number of participants for whom data was available for the two variables in a given pairwise comparison (i.e., client and therapist, client and observer, or therapist and observer).

Table 3. Correlations Between TA Variables

|                 |                     | <b>WAI-C-SF</b> | <b>WAI-T-SF</b> | <b>WAI-O-SF</b> |
|-----------------|---------------------|-----------------|-----------------|-----------------|
| <b>WAI-C-SF</b> | Pearson correlation | 1               | .307            | .113            |
|                 | <i>P</i>            | -               | .144            | .607            |
|                 | <i>N</i>            | 30              | 24              | 23              |
| <b>WAI-T-SF</b> | Pearson correlation | .307            | 1               | .171            |
|                 | <i>P</i>            | .144            | -               | .485            |
|                 | <i>N</i>            | 24              | 24              | 19              |
| <b>WAI-O-SF</b> | Pearson correlation | .113            | .171            | 1               |
|                 | <i>P</i>            | .607            | .485            | -               |
|                 | <i>N</i>            | 23              | 19              | 25              |

*Note:* WAI-C-SF = Working Alliance Inventory- Client Version (Short Form); WAI-T-SF = Working Alliance Inventory- Therapist Version (Short Form); WAI-O-SF = Working Alliance Inventory- Observer Version (Short Form)



## REFERENCES

- Addis, M. E., & Krasnow, A. D. (2000). A national survey of practicing psychologists' attitudes toward psychotherapy treatment manuals. *Journal of Counseling and Clinical Psychology, 68*(2), 331-339.
- Adler, G., Shahar, B., Dolev, T., & Zilcha-Mano, S. (2018). The development of the working alliance and its ability to predict outcome in emotion-focused therapy for social anxiety disorder. *The Journal of Nervous and Mental Disease, 206*(6), 446-454.
- Adler, N. E., Epel, E. S., Castellazzo, G., & Ickovics, J. R. (2000). Relationship of subjective and objective social status with psychological and physiological functioning: Preliminary data in healthy white women. *Health Psychology, 19*(6), 586-592.
- Álvarez-Jiménez, M., Parker, A. G., Hetrick, S. E., McGorry, P. D., & Gleeson, J. F. (2011). Preventing the second episode: A systematic review and meta-analysis of psychosocial and pharmacological trials in first-episode psychosis. *Schizophrenia Bulletin, 37*(3), 619-630.
- Barrowclough, C., Meier, P., Beardmore, R., & Emsley, R. (2010). Predicting therapeutic alliance in clients with psychosis and substance misuse. *Journal of Nervous and Mental Disease, 198*(5), 373-377.
- Bentall, R., Tarrier, N., Lewis, S., Haddock, G., Kinderman, P., Kingdon, D., & the SoCRATES team (2002). The therapeutic alliance in early psychosis. *Acta Psychiatrica Scandinavica, 106*(s413), 69-106.
- Bentler, P. M. (2007). On tests and indices for evaluating structural models. *Personality and Individual Differences, 42*(5), 825-829.
- Berry, K., Gregg, L., Lobban, F., & Barrowclough, C. (2016). Therapeutic alliance in psychological therapy for people with recent onset psychosis who use cannabis. *Comprehensive Psychiatry, 67*, 73-80.
- Bielanska, A., Cechnicki, A., & Hanuszkiwicz, I. (2016). The significance of the personality traits of schizophrenic patients and their therapists for the therapeutic relationship. *Psychiatria Polska, 50*(4), 771-786.
- Bourdeau, G., Thérout, L., Lecomte, T. (2009). Predictors of therapeutic alliance in early psychosis. *Early Intervention in Psychiatry, 3*(4), 300-303.
- Bordin, E. S. (1979). The generalizability of the psychoanalytic concept of the working alliance. *Psychotherapy: Theory, Research, and Practice, 16*(3), 252-260.
- Browne, J., Mueser, K. T., Meyer-Kalos, P., Gottlieb, J. D., Estroff, S. E., & Penn, D. L. (2019). The therapeutic alliance in individual resiliency training for first episode psychosis:

- Relationship with treatment outcomes and therapy participation. *Journal of Consulting and Clinical Psychology*, 87(8), 734-744.
- Browne, J., Nagendra, A., Kurtz, M., Berry, K., & Penn, D.L. (2019). The relationship between the therapeutic alliance and client variables in individual treatment for schizophrenia spectrum disorders and early psychosis: Narrative review. *Clinical Psychology Review*, 71, 51-62.
- Catty, J., Koletsi, M., White, S., Becker, T., Fioritti, A., Kalkan, R., Lauber, C., Lissouba, P., Rössler, W., Tomov, T., van Busschbach, J. T., Wiersma, D., & Burns, T. (2010). Therapeutic relationships: Their specificity in predicting outcomes for people with psychosis using clinical and vocational services. *Social Psychiatry and Psychiatric Epidemiology*, 45(12), 1187-1193.
- Catty, J., White, S., Koletsi, M., Becker, T., Fioritti, A., Kalkan, R., Lauber, C., Lissouba, P., Rössler, W., Tomov, T., van Busschbach, J. T., Wiersma, D., & Burns, T. (2011). Therapeutic relationships in vocational rehabilitation: Predicting good relationships for people with psychosis. *Psychiatry Research*, 187(1-2), 68-73.
- Chao, P. J., Steffen, J. J., & Heiby, E. M. (2011). The effects of working alliance and client-clinician ethnic match on recovery status. *Community Mental Health Journal*, 48, 91-97.
- Cloutier, M., Aigbogun, M. S., Guerin, A., Nitulescu, R., Ramanakumar, A. V., Kamat, S. A., DeLucia, M., Duffy, R., Legacy, S. N., Henderson, C., Francois, C., & Wu, E. (2016). The economic burden of schizophrenia in the United States in 2013. *Journal of Clinical Psychiatry*, 77, 764-771.
- Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior*, 24, 385-396.
- Corrigan, P. W., Liberman, R. P., & Engel, J. D. (1990). From noncompliance to collaboration in the treatment of schizophrenia. *Hospital & Community Psychiatry*, 41(11), 1203-1211.
- Couture, S. M., Roberts, D. L., Penn, D. L., Cather, C., Otto, M. W., & Goff, D. (2006). Do baseline client characteristics predict the therapeutic alliance in the treatment of schizophrenia? *Journal of Nervous and Mental Disease*, 194(1), 10-14.
- Craig, T. K. J., Garety, P., Power, P., Rahaman, N., Colbert, S., Fornells-Ambrojo, M., & Dunn, G. (2004). The Lambeth Early Onset (LEO) team: Randomised controlled trial of the effectiveness of specialised care for early psychosis. *BMJ: British Medical Journal*, 329(7474), 1067.
- Davis, L. W., & Lysaker, P. H. (2004). Neurocognitive correlates of therapeutic alliance in schizophrenia. *Journal of Nervous and Mental Disease*, 192(7), 508-510.

- Davis, L. W., & Lysaker, P. H. (2007). Therapeutic alliance and improvements in work performance over time in patients with schizophrenia. *Journal of Nervous and Mental Disease, 195*(4), 353-357.
- Demakakos, P., Nazroo, J., Breeze, E., & Marmot, M. (2008). Socioeconomic status and health: The role of subjective social status. *Social Science and Medicine, 67*(2), 330-340.
- Dixon, L. B., Holoshitz, Y., & Nossel, I. (2016). Treatment engagement of individuals experiencing mental illness: Review and update. *World Psychiatry 15*(1), 13–20.
- Doyle, R., Turner, N., Fanning, F., Brennan, D., Renwick, L., Lawlor, E., & Clarke, M. (2014). First-episode psychosis and disengagement from treatment: A systematic review. *Psychiatric Services, 65*(5), 603-611.
- Elvins, R. & Green, J. (2008). The conceptualization and measurement of therapeutic alliance: An empirical review. *Clinical Psychology Review, 28*, 1167-1187.
- Evans-Jones, C., Peters, E., & Barker, C. (2009). The therapeutic relationship in CBT for psychosis: Client, therapist and therapy factors. *Behavioral and Cognitive Psychotherapy, 37*(5), 527-540.
- Fusar-Poli, P., McGorry, P. D., Kane, J. M. (2017). Improving outcomes of first-episode psychosis: An overview. *World Psychiatry, 16*(3), 251-265.
- Fitzpatrick, M. R., Iwakabe, S., & Stalikas, A. (2005). Perspective divergence in the working alliance. *Psychotherapy Research, 15*(1-2), 69-80.
- Foussias, G., Agid, O., Fervaha, G., & Remington, G. (2014). Negative symptoms of schizophrenia: Clinical features, relevance to real world functioning and specificity versus other CNS disorders. *European Neuropsychopharmacology, 24*(5), 693-709.
- Gehrs M. & Goering, P. (1994). The relationship between the working alliance and rehabilitation outcomes of schizophrenia. *Psychosocial Rehabilitation Journal, 18*(2), 43–54.
- Goldsmith, L. P., Lewis, S. W., Dunn, G., & Bentall, R. P. (2015). Psychological treatments for early psychosis can be beneficial or harmful, depending on the therapeutic alliance: An instrumental variable analysis. *Psychological Medicine, 45*(11), 2365–2373.
- Hamann, J., Cohen, R., Leucht, S., Busch, R., & Kissling, W. (2007). Shared decision making and long-term outcome in schizophrenia treatment. *The Journal of Clinical Psychiatry, 68*(7), 992-997.
- Hanson, W. E., Curry, K. T., & Bandalos, D. L. (2002). Reliability generalization of Working Alliance Inventory scale scores. *Educational and Psychological Measurement, 62*(4), 659–673.

- Heinrichs, D. W., Hanlon, T. E., & Carpenter, W. T. (1984). The Quality of Life Scale: An instrument for rating the schizophrenic deficit syndrome. *Schizophrenia Bulletin*, *10*, 388-398.
- Horvath, A. O., Del Re, A. C., Flückiger, C., & Symonds, D. (2011). Alliance in individual psychotherapy. *Psychotherapy*, *48*(1), 9-16.
- Horvath, A. O. & Greenberg, L. S. (1989). Development and validation of the Working Alliance Inventory. *Journal of Counseling Psychology*, *36*(2):223–233.
- Horvath, A. O. & Luborsky, L. (1993). The role of the therapeutic alliance in psychotherapy. *Journal of Consulting and Clinical Psychology*, *61*(4), 561-573.
- Horvath A. O. & Symonds, B. D. (1991) Relation between working alliance and outcome in psychotherapy: A meta-analysis. *Journal of Counseling Psychology*, *38*, 139–149.
- Huddy, V., Reeder, C., Kontis, D., Wykes, T., & Stahl, D. (2012). The effect of working alliance on adherence and outcome in cognitive remediation therapy. *Journal of Nervous and Mental Disease*, *200*(7), 614-619.
- Hunter, R., & Barry, S. (2012). Negative symptoms and psychosocial functioning in schizophrenia: Neglected but important targets for treatment. *European Psychiatry*, *27*(6), 432-436.
- Johansen, R., Iversen, V.C., Melle, I., & Hestad, K.A. (2013). Therapeutic alliance in early schizophrenia spectrum disorders: A cross-sectional study. *Annals of General Psychiatry*, *12*(1), 14.
- Johansen, R., Melle, I., Iversen, V.C., & Hestad, K. (2013). Personality traits, interpersonal problems and therapeutic alliance in early schizophrenia spectrum disorders. *Comprehensive Psychiatry*, *54*(8), 1169-1176.
- Jung, E., Wiesjahn, M., & Lincoln, T. M. (2014). Negative, not positive symptoms predict the early therapeutic alliance in cognitive behavioral therapy for psychosis. *Psychotherapy Research*, *24*(2), 171–183
- Kay, S. R., Opler, L. A., & Fiszbein, A. (1992). *Positive and Negative Syndrome Scale: Manual*. Toronto: Multi-Health Systems.
- Kane, et al. (2016). Comprehensive versus usual community care for first-episode psychosis: 2-year outcomes from the NIMH RAISE Early Treatment Program. *American Journal of Psychiatry*, *173*(4).
- Krupnick, J. L., Sotsky, S. M., Simmons, S., Moyer, J., Elkin, L., & Watkins, J. T. (1996). The role of the therapeutic alliance in psychotherapy and pharmacotherapy outcome: Findings

- in the National Institute of Mental Health Treatment of Depression Collaborative Research Programme. *Journal of Consulting and Clinical Psychology*, 64, 532–539.
- Langer, D. A., McLeod, B. D., & Weisz, J. R. (2011). Do treatment manuals undermine youth–therapist alliance in community clinical practice? *Journal of Consulting and Clinical Psychology*, 79(4), 427–432.
- Lecomte, T., Laferriere-Simard, M., & Leclerc, C. (2012). What does the alliance predict in group interventions for early psychosis? *Journal of Contemporary Psychotherapy*, 42, 55-61.
- Lecomte, T., Spidel, A., Leclerc, C., MacEwan, G. W., Greaves, C., & Bentall, R. P. (2008). Predictors and profiles of treatment non-adherence and engagement in services problems in early psychosis. *Schizophrenia Research*, 102, 295-302.
- MacBeth, A., Gumley, A., Schwannauer, M., & Fisher, R. (2013). Service engagement in first episode psychosis: Clinical and premorbid correlates. *The Journal of Nervous and Mental Disease*, 201(5), 359-364.
- Malla, A., & Payne, J. (2005). First-episode psychosis: Psychopathology, quality of life, and functional outcome. *Schizophrenia Bulletin*, 31(3), 650–671.
- Martin, D. J., Garske, J. P., & Davis, M. K. (2000). Relation of the therapeutic alliance with outcome and other variables: A meta-analytic review. *Journal of Counseling and Clinical Psychology*, 68(3), 438-450.
- McCabe, R., & Priebe, S. (2003). Are therapeutic relationships in psychiatry explained by patients’ symptoms? Factors influencing patient ratings. *European Psychiatry*, 18(5), 220-225.
- McCabe, R., John, P., Dooley, J., Healey, P. R., Cushing, A., Kingdon, D., Bremner, S. & Priebe, S. (2016). Training to enhance psychiatrist communication with patients with psychosis (TEMPO): Cluster randomised controlled trial. *British Journal of Psychiatry*, 209(6), 517-524.
- McLeod, B. D. (2011). Relation of the alliance with outcomes in youth psychotherapy: A meta-analysis. *Clinical Psychology Review*, 31, 603-616.
- McGorry, P. D., Edwards, J., Mihalopoulos, C., Harrigan, S. M., & Jackson, H. J. (1996). EPPIC: An evolving system of early detection and optimal management. *Schizophrenia Bulletin*, 22(2), 305-326.
- McGorry P. D., Killackey, E., & Yung, A. (2008). Early intervention in psychosis: Concepts, evidence and future directions. *World Psychiatry*, 7(3), 148-156.

- Montreuil, T. C., Cassidy, C. M., Rabinovitch, M., Pawliuk, N., Schmitz, N., Joobar, R., & Malla, A. K. (2012). Case manager-and patient-rated alliance as a predictor of medication adherence in first-episode psychosis. *Journal of Clinical Psychopharmacology*, *32*(4), 465-469.
- Neale, M. S., & Rosenheck, R. A. (1995). Therapeutic alliance and outcome in a VA intensive case management program. *Psychiatric Services*, *46*(7), 719-721.
- Ormel, J., Petukhova, M., Chatterji, S., Aguilar-Gaxiola, S., & Alonso, J. (2008). Disability and treatment of specific mental and physical disorders. *British Journal of Psychiatry*, *192*(5), 368-375.
- Perkins, D. O., Gu, H., Boteva, K., & Lieberman, J. A. (2005). Relationship between duration of untreated psychosis and outcome in first-episode schizophrenia: A critical review and meta-analysis. *The American Journal of Psychiatry*, *162*(10), 1785-1804.
- Rabinowitz, J., Levine, S. Z., Garibaldi, G., Bugarski-Kirola, D., Berardo, C. G., & Kapur, S. (2012). Negative symptoms have greater impact on functioning than positive symptoms in schizophrenia: Analysis of CATIE data. *Schizophrenia Research* *137*, 147-150.
- Sharf, J., Primavera, L. H., & Diener, M. J. (2010). Dropout and therapeutic alliance: A meta-analysis of adult individual psychotherapy. *Psychotherapy: Theory, Research, Practice, Training*, *47*(4), 637-645.
- Shattock, L., Berry, K., Degnan, A., & Edge, D. (2018). Therapeutic alliance in psychological therapy for people with schizophrenia and related psychoses: A systematic review. *Clinical Psychology & Psychotherapy*, *25*(1), e60-e85.
- Singh-Manoux, A., Marmot, M. G., & Adler, N. E. (2005). Does subjective social status predict health and change in health status better than objective status? *Psychosomatic Medicine*, *67*(6), 855-861.
- Startup, M., Wilding, N., & Startup, S. (2006). Patient treatment adherence in cognitive behaviour therapy for acute psychosis: The role of recovery style and working alliance. *Behavioural and Cognitive Psychotherapy*, *34*, 191-199.
- Stewart, R. E., Stirman, S. W., & Chambless, D. L. (2012). A qualitative investigation of practicing psychologists' attitudes toward research-informed practice: Implications for dissemination strategies. *Professional Psychology: Research and Practice*, *43*(2), 100-109.
- Svensson, B., & Hansson, L. (1999). Therapeutic alliance in cognitive therapy for schizophrenic and other long-term mentally ill patients: Development and relationship to outcome in an in-patient treatment programme. *Acta Psychiatrica Scandinavica*, *99*(4), 281-287.

- Tessier, A., Boyer, L., Husky, M., Baylé, F., Llorca, P. M., & Misdrahi, D. (2017). Medication adherence in schizophrenia: The role of insight, therapeutic alliance and perceived trauma associated with psychiatric care. *Psychiatry Research*, *257*, 315–321.
- Tryon, G. S., Blackwell, S. C., & Hammel, E. F. (2007). A meta-analytic examination of client-therapist perspectives of the working alliance. *Psychotherapy Research*, *17*, 629–642.
- van der Gaag, M., Hoffman, T., Remijnsen, M., Hijman, R., de Haan, L., van Meijel, B., van Harten, P. N., Valmaggia, L., de Hert, M., Cuijpers, A., & Wiersma, D. (2006). The five-factor model of the Positive and Negative Syndrome Scale II: A ten-fold cross-validation of a revised model. *Schizophrenia Research*, *85*, 280-287.
- van Meijel, B., Megens, Y., Koekkoek, B., de Vogel, W., Kruitwagen, C., & Grypdonck, M. (2009). Effective interaction with patients with schizophrenia: Qualitative evaluation of the interaction skills training programme. *Perspectives in Psychiatric Care*, *45*(4), 254-261.
- Wechsler, D. (1999). *Wechsler Abbreviated Scale of Intelligence*. San Antonio, TX: The Psychological Corporation.
- Widschwendter, C. G., Hofer, A., Baumgartner, S., Edlinger, M., Kemmler, G., & Rettenbacher, M. A. (2016). Therapeutic alliance in patients with schizophrenia: Introduction of a new rating instrument. *Journal of Psychiatric Practice*, *22*(4), 298–307.
- Wittorf, A., Jakobi, U., Bechdolf, A., Müller, B., Sartory, G., Wagner, M., Wiedemann, G., Wolwer, W., Herrlich, J., Buchkremer, G., & Klingberg, S. (2009). The influence of baseline symptoms and insight on the therapeutic alliance early in the treatment of schizophrenia. *European Psychiatry*, *24*(4), 259–267.
- Wykes, T., Rose, D., Williams, P., & David, A. S. (2013). Working alliance and its relationship to outcomes in a randomized controlled trial (RCT) of antipsychotic medication. *BMC Psychiatry*, *13*, 28.