

# **An Empirical Evaluation of Luborsky's Biphasic Model of the Therapeutic Alliance within the Context of a Randomized Controlled Trial**

by

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B.A. (Psychology), University of British Columbia, 2002

THESIS SUBMITTED IN PARTIAL FULFILLMENT  
OF THE REQUIREMENTS FOR THE DEGREE OF  
MASTER OF ARTS

in the  
Counselling Psychology Program  
Faculty of Education

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**SIMON FRASER UNIVERSITY**

**Summer 2011**

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## **Abstract**

The primary goal of this study was to assess the validity of a prominent model of the therapeutic alliance, Luborsky's Helping Alliance, in which components of the alliance develop differentially in two phases of therapy. This study used secondary data from a randomized, controlled trial (Svartberg et al., 2004) in which patients rated the alliance twice during therapy using a measure based on Luborsky's model (Helping Alliance Questionnaire; HAQ-I). The secondary purpose of this study was to investigate the association between alliance and short and long-term outcome. HAQ-I data were factor analyzed to assess the measure's fit with the biphasic model and regression analyses were performed to investigate the association between alliance and short and long-term outcome. The results of the analyses did not support the biphasic model as measured by the HAQ-I. Regression analyses revealed a number of significant associations between HAQ-I scores and long-term outcome.

**Keywords:** Therapeutic alliance; helping alliance questionnaire; alliance-outcome relationship; Luborsky

## Acknowledgements

I am sincerely grateful to Adam Horvath, my senior supervisor, for his enduring patience, advice, and encouragement over the years. Throughout my graduate studies, Adam has been my course instructor, clinical supervisor, and senior thesis supervisor. I have learned a great deal from Adam, and I feel very fortunate to have been his student.

I also want to thank Lucy Le Mare, internal committee member, for her very useful feedback on my thesis, and for the insights she shared during my defence. My thanks also go to William Piper, external examiner, for his constructive input during my thesis defence.

I want to express my gratitude to Leigh McCullough, who was instrumental in arranging for me to obtain the secondary data used in my study. I have not met Leigh in person, but we have had many email conversations (in English and in our beginner's Norwegian).

I also want to thank Martin Svartberg, Tore Stiles, and Pål Ulvenes for generously sharing their rich data set.

And finally, my thanks to my wife, parents, and friends for their unwavering support, encouragement, and patience over the years that I was working on this master's degree.

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# Chapter 1.

## Introduction and Background

A relationship between the therapeutic alliance and psychotherapy outcome is evident across a broad range of outcome measures (Horvath & Bedi, 2002; Horvath & Symonds, 1991; Martin, Garske, & Davis, 2000) and it has been firmly established as a significant if not crucial factor in effective therapy. There is a lack of clarity, however, surrounding three key aspects of the alliance-outcome link which calls for further investigation. First, eminent models of the alliance vary in their account of its underlying structure, which suggests that there is work to be done in clarifying the alliance as a construct. This also makes it difficult to make comparisons between the results of studies using alliance measures of different theoretic provenance. Second, the association between alliance measured at different phases of therapy and both short and long-term outcome is unclear. And, third, the relative contribution of the alliance across different outcome measures remains under-researched.

One of the seminal models of the alliance is Luborsky's (1976) biphasic model, which postulates a two-stage developmental trajectory of the alliance over the course of therapy. During the first phase (Helping Alliance Type 1), emphasis is placed on the patient's<sup>1</sup> belief that the therapist can help him or her, that the therapist genuinely cares about the patient, and on the patient's perception of the therapist as being kind and receptive. This phase is theorized to occur in early therapy, approximately during the first 20 sessions. In the second phase (Helping Alliance Type 2), emphasis is placed on

<sup>1</sup> The term 'patient' (instead of 'client') is used throughout this paper in order to retain the terminology used by Luborsky in his writings and also by Svartberg et al. (2004), whose study generated the data for the present study.

collaborative and task oriented aspects of the patient-therapist relationship. It has been proposed that this phase tends to eventuate later in therapy, becoming stronger after approximately the 20<sup>th</sup> session. It should be noted that Luborsky practiced psychodynamic psychotherapy at a time when the concept of brief therapy had not yet emerged, which may explain why he deemed the first 20 sessions of psychotherapy as being a relatively early phase.

Luborsky's alliance model remains influential among alliance theorists and the alliance measures that are based on it are used extensively in clinical research; however, the biphasic aspect of this model, in particular, is under-researched.

## **Purpose**

The primary purpose of this study was to determine whether Luborsky's (1976) biphasic (two-stage) alliance model is instantiated within the context of a randomized, controlled trial (RCT; secondary, anonymous data) comparing the effectiveness of short-term dynamic psychotherapy (STDP) and cognitive therapy (CT) for patients carrying a diagnosis of a DSM-III R Cluster C personality disorder (Svartberg, Stiles, & Seltzer, 2004). Svartberg's team administered the Helping Alliance Questionnaire (HAQ-I) (Alexander & Luborsky, 1986), which includes subscales for Helping Alliance Type 1 and Type 2, to their study participants in early and mid-therapy, thus providing an opportunity to evaluate the theorized two-stage model by comparing the relative growth of Type 1 and Type 2 alliance over the course of therapy and via factor analysis.

The secondary purpose of the present study was to explore the contributions of early- and mid-phase alliance to both short-term and long-term outcomes. The Svartberg RCT included a broad range of outcome measures, frequent data collection intervals, and a long-term follow-up protocol. Their comprehensive measurement of outcome enabled an exploration of change in outcome variables over time that might be accounted for by aspects of the alliance.

A preliminary analysis of the Svartberg RCT data examining the contribution of the alliance to outcome suggested a differential relationship between the early and mid-therapy alliance and outcome, and an intriguingly strong relationship between alliance

and long-term follow-up outcome measures, particularly distress related to psychological symptoms and interpersonal functioning. The present investigation further examined the impact of the alliance on outcome in the study sample.

## Research Questions

This study focused on the following research questions:

1. To what extent is Luborsky's hypothesized model of a biphasic alliance supported by the Svartberg RCT data?
2. What are the contributions of the therapeutic alliance measured at early and mid-therapy to short-term and long-term outcome in patients with Cluster C personality disorders receiving STDP or CT?
3. What are the differential contributions of the alliance across outcome measures?

The Helping Alliance Questionnaire (HAQ-I) (Alexander & Luborsky, 1986), is commonly used in psychotherapy research and practice (mainly in Europe), despite the existence of a revised version of the measure (HAQ-II); however, the measure's underlying theoretical constructs (Type 1 and Type 2 alliance) have not been empirically evaluated to any great extent. Given the popularity of the HAQ-I and the lack of empirical validation for its theorized components, a closer examination was warranted. This study builds on previous research investigating the validity of the HAQ-I, with a particular focus on the biphasic aspect of the measure. To my knowledge, the present study is unique in that it specifically explored whether there was differential change in Type 1 and Type 2 scores within the timeframe featured in Luborsky's biphasic model of the alliance. The findings of this study may serve to inform the ongoing dialogue surrounding the structure and dynamics of the therapeutic alliance.

An additional goal of the present study was to investigate the strength of the association between alliance scores at different times in therapy and outcome at near-termination (6-months follow-up) and in the longer term (2-years follow-up). These findings will add to the growing body of knowledge relating to the impact of the alliance on outcome, particularly with respect to personality disordered populations.

## **Chapter 2.**

### **Literature Review**

#### **The Concept of the Alliance**

The notion that the relationship between therapist and patient is critical to effective therapy can be traced to Freud's (1912) assertion that the patient's unconscious re-enactment of relational patterns with the therapist is essential to the psychoanalytic process. In this context, the therapist-patient relationship primarily functions as an arena wherein transference-related phenomena are brought into awareness and rationally scrutinized. Freud's conceptualization of the therapist-patient relationship did not highlight the patient's experience of therapist empathy; nor did it consider therapist-patient collaboration as a prime therapy process goal.

Within the context of a growing influence of humanism in psychotherapy, theorists in the 1950s began stressing the importance of therapist empathy and demonstration of positive regard for the patient (Anderson & Anderson, 1962; Rogers, 1965). In contrast to the Freudian psychoanalytic perspective, from the client-centred/humanist point of view the relationship is an essential ingredient of effective therapy in its own right, not simply a contextual factor. There were, however, advances in psychodynamic theory at this time, particularly by Zetzel (1956) and Greenson (1965) who coined the terms 'therapeutic alliance' and 'working alliance' respectively, which placed new emphasis on the collaborative aspect of therapy. Indeed, both of the seminal alliance theorists of the 1970s, Bordin and Luborsky, shared a background in the psychodynamic tradition (Horvath, 2006).

Prior to the 1970s, little empirical work was undertaken to build on alliance theory. Moreover, conceptualizations of the alliance were constrained within the boundaries of particular theories of psychotherapy. Closing part of this gap, Orlinsky

and Howard (1975) combined patient self-report data and existing theory to develop a tripartite model of the alliance constituted of the *working alliance* (investment in the process of therapy), *empathic resonance*, and *mutual affirmation* (similar to Rogerian positive regard) (Elvins & Green, 2008).

Building on the work of Orlinsky and Howard, Bordin (1979) subsequently defined the alliance as a complex of three elements: agreement on tasks, agreement on goals, and the interpersonal, affective bond; that is, the extent to which the therapist and patient agree on the steps they need to take (tasks) toward the overall therapeutic objectives (goals), and the emotional connection they experience with one another (bond). Bordin's model also explicitly presented the alliance as a pantheoretical construct removed from any particular school of psychotherapy.

Concurrently with Bordin, Luborsky (1976) proposed a pantheoretical model of the *helping alliance* that he defined as "the patient's experience of the treatment or relationship with the therapist as helpful or potentially helpful" (p. 326). Luborsky had been searching for factors in early therapy that could predict outcome to a greater extent than pretreatment predictors which had turned out to be the disappointingly weak (Alexander & Luborsky, 1986). A close scrutiny of transcripts from an earlier large scale psychotherapy study, the Penn Psychotherapy Project, (Luborsky et al., 1980) led Luborsky to conclude that the helping alliance has two components which he called Type 1 and Type 2. The first component, Type 1, which is theorized to develop in early therapy, involves the patient experiencing the therapist as being helpful. The second component, Type 2, is thought to develop in later sessions, and is typified by the patient's experience of working collaboratively with the therapist. It is important to note that this particular model of the alliance takes into account change in the patient-therapist relationship as psychotherapy progresses over time and that one alliance component (Type 2) is theorized to eventuate (or at least become stronger) after the first component (Type 1). It is this sequential distinction that supports the use of the term *biphasic* for Luborsky's model rather than *bipartite* which connotes a two-part alliance without chronological order.

A significant achievement of Luborsky's work was the development of quantitative methods for measuring the helping alliance, which culminated in the

publication of the Penn Helping Alliance Scales (Alexander & Luborsky, 1986). The Penn Scales include two observer rated instruments and one patient rated instrument, the Helping Alliance Questionnaire (HAQ-I), which is the focus of this study. The HAQ-I was revised by Luborsky and colleagues to create the HAQ-II; however, the HAQ-I continues to be used fairly extensively (Elvins & Green, 2008).

## **Factor Analytic Studies of the HAQ-I**

A number of studies have investigated the validity and reliability of the HAQ-I and, in general, there is a lack of support for the Type 1 and Type 2 constructs. Hatcher and Barends (1996) conducted a factor analysis of the HAQ-I in a study investigating three different alliance measures. They found that for the HAQ-I (and the other two instruments) there was an “extreme divergence between the exploratory analyses [i.e., factor analyses] and the measures’ conceptual models” (p. 1330) and concluded that a single alliance factor could account for the majority of variance in alliance scores. Notably, they found little support for the theorized HAQ-I Type 1 and Type 2 factors. Their exploratory factor analysis of the HAQ-I resulted in two factors that only obliquely matched the a priori structure of the measure and they remarked that the HAQ-I items seem to elicit global assessments of the alliance more so than for distinct components of the alliance (i.e., Types 1 and 2). Hatcher and Barends go on to note that the HAQ-I includes a significant number of items that relate to outcome, an issue that will be addressed later in this paper.

De Weert-Van Oene (1999) and her colleagues investigated the psychometric properties of the HAQ-I in a large sample ( $N = 340$ ) of substance dependent patients attending an inpatient detoxification unit. Their exploratory factor analysis resulted in a roughly similar loading structure found by Hatcher and Barends (1996) with two factors that bore a minimal resemblance to the Type 1 and Type 2 alliance subscales. De Weert-Van Oene’s team concluded that the HAQ-I works as a global measure of the alliance and can be used to gauge the overall perception held by patients of the strength of the therapeutic relationship with their therapist; however, their analysis did not support the model proposed by Luborsky to any great extent.

In a recent study of the psychometrics of the HAq-I, Hendriksen et al. (2010) combined data from three related randomized controlled trials investigating the effectiveness of short-term psychoanalytic supportive psychotherapy (SPSP) in patients with major depression. Patients received 16 therapy sessions over the course of 24 weeks and completed the HAq-I at two time points: at approximately the 10<sup>th</sup> week (mid-therapy) and at the end of therapy (24<sup>th</sup> week). The sample was divided into two samples: one for an exploratory factor analysis and the other for a confirmatory factor analysis. The two primary goals of Hendriksen and colleagues' study were to investigate the empirically derived factor structure of the HAq-I and to determine the degree of stability of the factor structure of the HAq-I from one measurement interval to the next. Factor analyses revealed two factors that were somewhat similar to those found by Hatcher and Barends (1996) and De Weert-Van Oene (1999), and dissimilar to the theorized Type 1 and Type 2 factors. Further, the derived factor structure proved to be generally stable from mid-therapy to termination, though Hendriksen did not test the stability or relative growth of theorized Type 1 or Type 2 factors.

## **Multiple Measures of the HAq-I Subscales**

In two related studies, Bachelor and Salamé (2000) explored participants' alliance related perceptions over the course of therapy. They noted that, while there was little consensus surrounding the typical developmental pattern of the alliance, most theorists held the view that the alliance is dynamic. They also noted that the chronology of the alliance had been under-researched. In one of the studies, Bachelor and Salamé administered the HAq-I to 30 patients after the 5<sup>th</sup> and 10<sup>th</sup> sessions. Their analysis revealed that both Type 1 and Type 2 subscale scores increased slightly over the course of therapy, but that there no was significant difference between the two. The researchers caution that the reliability of the Type 2 subscale scores was hampered by the small number of items that constitute the subscale in the HAq-I (three items for the Type 2 subscale versus eight items for Type 1).

Cailhol and colleagues (2008) administered the HAq-I to patients at several time points in a study comparing two different psychotherapies. Seventy-four patients completed the HAq-I in each of four sessions of a brief therapy schedule. This



investigation revealed that HAQ-I scores increased over the course of the four sessions, with Type 2 scores increasing slightly more than the Type 1 scores. Unfortunately, there were a number of aspects of Cailhol et al.'s study protocol that make it difficult to judge the implications of their results for the validity of the Type 1 and Type 2 subscales. First, they assigned different HAQ-I items to each of the subscales than Luborsky. Cailhol et al. assigned five items to the Type 1 subscale, while Luborsky assigned the first eight items; to the Type 2 subscale they assigned six items, while Luborsky assigned three. It was unclear in their paper describing the study which particular items Cailhol's team assigned to each subscale. Second, Cailhol and colleagues' study ran for four sessions in total, which is well under the 20 sessions that Luborsky proposed is typically required to see the Type 2 alliance becomes more evident.

Interestingly, Cailhol et al. report that the presence of Axis II disorders (personality disorders) was associated with lower HAQ-I Type 2 scores but this was not the case with Type 1 scores. Again, the implications of their findings are difficult to discern given the methodological dissimilarities with the present study; however, given that the participants in the present study all carried an Axis II diagnosis, it is an intriguing finding that may be of relevance.

## **The HAQ-I and Therapy Outcome**

There have been a number of studies investigating the association between HAQ-I scores and outcome. Beginning with Luborsky and colleagues' study (Luborsky, McLellan, Woody, O'Brien, & Auerbach, 1985) in which male veterans on a methadone-maintenance program for opiate addiction completed the HAQ-I at the third therapy session, HAQ-I scores were significantly related to outcome as measured by psychological functioning, drug use, legal status, and employment status.

There are few studies that investigated the association between HAQ-I scores and outcome using the outcome measures from the present study, the Symptom Checklist – 90 (SCL-90; Derogatis, 1983) and the Inventory of Interpersonal Problems (IIP; Horowitz, Rosenberg, Baer, Ureno, & Villasenor, 1988). Gunderson and his team (Gunderson, Najavits, Leonhard, Sullivan, & Sabo, 1997) administered the HAQ-I to

female patients diagnosed with Borderline Personality Disorder at six-weeks from the beginning of long-term therapy. Patients were followed for five years and completed the alliance measure and the SCL-90 at 6-months, and 1, 2, 3, 4, and 5 years post intake. Two outcome-related HAq-I items were removed from the analysis, leaving nine remaining. No significant association between HAq-I measured at 6-weeks into therapy and SCL-90 scores at 3-years follow-up were evident (correlations for the other follow-up intervals were not reported). The authors note that in this particular study, the volatile nature of the sample population and the fact that the study was unfunded resulted in a high attrition rate, thus limiting the interpretation of the findings.

In their investigation of patterns of alliance development over the course of therapy, de Roten et al. (2004) asked 70 outpatients undergoing brief (four sessions) psychotherapy for conditions related to anxiety, depression, or personality disorder to complete the HAq-I after each session. Patients also completed the SCL-90 at intake and after the last (4<sup>th</sup>) session to measure symptomatic improvement. It should be noted that 38% of the sample in this study presented with Cluster C personality disorders. Given that the present study's sample population carried a diagnosis of Cluster C personality disorder, de Roten's findings relating to alliance-outcome association may be of more relevance than other studies. HAq-I scores from the fourth (final) session explained little of the change in SCL-90 Global Severity Index (GSI), with an  $R^2$  of .066. The researchers did, however, find that the predictive power of HAq-I scores improved significantly when the shape (growth trajectory on a plot) was taken into account, with the  $R^2$  rising to .247 for the SCL-90 GSI score. Thus, it appears that change pattern in the HAq-I is a potentially crucial factor in –at least– short-term outcome.

In a later study, Le Bloc'h and colleagues (2006) conducted a comparison study investigating the relative value of the HAq-I versus the newly revised version, the HAq-II. The team administered both the HAq-I and the HAq-II to 60 outpatients at each of four sessions of a brief psychotherapy intervention protocol. HAq-I scores at the fourth (final) session were correlated with SCL-90 Global Severity Index,  $r = -.28$ ; however, they further noted that only the HAq-I items relating to symptom improvement were associated with symptom improvement as measured by the GSI, which they identified as "rather tautological" (p.27), and a good rationale for the removal of such items from the HAq-II.

In their investigation of patterns of change in the therapeutic alliance and its association with outcome, Piper and colleagues (1995) compared two samples of patients who scored high and low on a measure of the quality of object relations (QOR). They defined object relations as a person's tendency toward establishing particular types of relationships. Patients and therapists rated the alliance after the 7<sup>th</sup>, 14<sup>th</sup>, and final (20<sup>th</sup>) session using a six-item questionnaire that included two items representing the Type 1 and Type 2 subscales on the HAq-I. Outcome measures included the SCL-90 Global Severity Index (GSI), which was measured before therapy began, at completion, and at 5-months follow-up. The investigators found statistically significant variation in therapist-rated alliance scores for both low and high-QOR patient groups; however, only in the high-QOR group was the patient-rated alliance variation significant. Piper et al. also found that the pattern of change in the alliance predicted outcome differently in high and low-QOR groups. In the low-QOR group, there was a significant relationship between therapist-rated change in alliance and GSI at follow-up. In the high-QOR group the association between therapist-rated change in alliance and GSI at follow-up was nonsignificant; however, the average level (i.e., average score) of patient and therapist-rated alliance was significantly associated with GSI at follow-up. The results of Piper and colleagues' study highlight the impact of moderator variables in studies linking alliance to outcome, and the quality of object relations was identified as being a particularly important moderator variable. They also draw attention to the potential impact of the pattern of the alliance on outcome in some populations.

Given that the primary diagnosis of the patients in the present study is that of personality disorder, they could presumably exhibit relatively low-QOR. It is plausible, therefore, that the pattern of change in alliance in this study sample may be active as a moderator variable. Unfortunately, the quality of object relations was not measured in the Svartberg RCT, with the result that the effect of this moderator variable on the present findings is unknown.

## **CHAPTER 3**

### **METHOD**

#### **Data Source**

The present study constitutes a secondary analysis of archival data from a randomized controlled trial (RCT) comparing two forms of psychotherapy, Short-Term Dynamic Psychotherapy (STDP), developed by McCullough Vaillant (1997), and Beck and Freeman's Cognitive Therapy (1990) for outpatients with Cluster C personality disorders (Svartberg, Stiles, & Seltzer, 2004). This trial was the first to use a controlled design to compare two relatively dissimilar forms of therapy for personality disorders, extending an earlier controlled trial by Winston and colleagues (1994) that compared two dynamic therapies.

The Svartberg study (2004) used a broad range of outcome measures and frequent data collection intervals, coupled with two waves of alliance measures at early (4<sup>th</sup> session) and mid (20<sup>th</sup> session) phases of therapy. The data collected by Svartberg and colleagues provided an opportunity to evaluate Luborsky's assertion that alliance is biphasic and to explore change in outcome variables over time that might be accounted for by aspects of the alliance.

#### **Participants**

The trial sample was taken from an initial group of 127 patients presenting with DSM-III R Axis II Cluster C personality disorders whom were referred by two outpatient psychiatric clinics, private practice psychiatrists and psychologists, and general practitioners in Trondheim, Norway beginning in 1990. The patients were screened for the RCT by a trained evaluator. Patients were included if they were between the ages of

18 and 65 years, met the DSM-III R Cluster C diagnostic criteria, and carried no other diagnoses relating to personality disorders. Referred patients were evaluated one week hence using the Structured Clinical Interview for DSM-III R Axis I Disorders (SCID-I; (Spitzer, Williams, Gibbon & First, 1990) to establish a DSM-III R Axis I diagnosis.

Exclusion criteria included current or past psychosis, active substance dependence, current eating disorders, refusal to allow videotaping of their psychotherapy sessions, or refusal to discontinue involvement in other psychotherapeutic interventions. Prospective participants were subsequently evaluated by a psychodynamically oriented researcher and were provided with information relating to the study's format and what their participation would entail. Upon providing their written informed consent, patients were randomly assigned to a course of 40 dynamic or cognitive therapy sessions, with therapist assigned according to their availability. The final study sample comprised 50 participants (25 males and 25 females).

## **Alliance Measure**

Svartberg and colleagues measured the therapeutic alliance using a Norwegian translation of the Penn Helping Alliance Questionnaire (HAq-I) (Alexander & Luborsky, 1986). The HAq-I is a patient-rated alliance measure consisting of 11 items rated on a six-point Likert-type scale anchored by +3 = "Yes, I strongly feel that it is true" and -3 = "No, I strongly feel that it is untrue". The first eight items comprise the Helping Alliance Type 1 subscale, which reflects the degree to which the patient perceives the therapist and therapy as being helpful (e.g., "I believe that my therapist is helping me"). The last three items comprise the Helping Alliance Type 2 subscale, which reflects the degree of patient-therapist collaboration or joint effort toward therapeutic goals as perceived by the patient (e.g., "I feel I am working together with the therapist in a joint effort").

The HAq-I has been demonstrated to be a moderately strong predictor of outcome in a number of studies. Luborsky and colleagues (1985) reported moderate to high correlations between HAq-I scores and outcomes measured at seven months post-treatment, including involvement in the criminal justice system ( $r = .51$ ), psychological status ( $r = .58$ ), employment status ( $r = .70$ ), and drug use ( $r = .72$ ).

Six of the eleven items comprising the HAq-I reflect symptomatic improvement (e.g., 'I have been feeling better recently') and are therefore related to therapy outcome. Luborsky and colleagues undertook a revision of the HAq-I whereby they removed the six outcome-related items and added 11 new items to form the 19-item HAq-II (Luborsky et al., 1996). Taking this possible confound into account, outcome-related HAq-I items were removed from a number of the analyses relating alliance scores to measures of outcome in the present study.

## Outcome Measures

The Symptom Check List (SCL-90-R; Derogatis, 1983) is a 90-item, self-report questionnaire that measures general symptom distress and is commonly used in psychotherapy evaluations, especially those focusing on psychodynamic approaches, and psychopharmacological trials (Holi, 2003). Respondents rate the severity of symptom distress on nine subscales:

- Somatization
- Obsessive-Compulsive
- Interpersonal sensitivity
- Depression
- Anxiety
- Hostility
- Phobic anxiety
- Paranoid ideation
- Psychoticism

The SCL-90-R generates three global indices of distress:

- Global Severity Index (GSI)
- Positive Symptom Distress Index (PSDI)
- Positive Symptom Total (PST)

Internal consistency of the SCL-90-R is adequate (e.g.,  $\alpha$  ranging between .77 – .90 in a sample of 209 symptomatic subjects) (Derogatis, Rickels, & Roch, 1976). Test-

retest reliability has ranged from .78 – .90 (one-week test-retest interval) and .68 – .80 (10-week test-retest interval) (Holi, 2003).

The discriminant validity of this instrument (i.e., its ability to differentiate patient samples from community samples) is acceptable (Holi, 2003). While the construct validity of the nine dimensions indexed by the SCL-90-R subscales has been questioned, there is support for the instrument's validity as a global measure of symptom distress (Cyr et al., 1985).

The Inventory of Interpersonal Problems (IIP; Horowitz, Rosenberg, Baer, Ureno, & Villasenor, 1988) is a self-report questionnaire measuring problems relating to the patient's interpersonal functioning and the distress that it causes. Respondents use a Likert-type ordered response scale to rate the degree to which they have been interpersonally distressed in the domains of intimacy, assertiveness, sociability, control, submissiveness, and responsibility. This measure has demonstrated internal consistency, high test-retest reliability, and high sensitivity to clinically relevant changes (Horowitz et al., 1988).

## **Data Collection**

The HAQ-I was completed at session 4 ( $n = 49$ ) and session 20 ( $n = 50$ ). From the perspective of Luborsky's theory, session 4 is considered to fall within the early phase of therapy, while the twentieth session falls within the mid phase. With some exceptions, Svartberg et al. (2004) administered outcome measures at six intervals: pre, mid-treatment (session #20), at termination (40 sessions), at 6-months follow-up, 1-year follow-up, and 2-years follow-up.

## **Statistical Analyses**

To assess the degree to which the alliance data fit Luborsky's theorized two-factor model, confirmatory factor analysis was performed with LISREL 8.8 for Windows (Jöreskog & Sörbom, 1993). To judge the fit of Luborsky's model, Bohn and colleagues' (1996) criteria were used:

1. The ratio of factor loadings to standard error is greater than 2.0
2. The ratio of Chi-squared to degrees of freedom equals 3.0 or less
3. Item reliabilities are 0.5 or more
4. Standardized mean square residual is less than 0.05
5. Goodness of fit indices (including adjusted and normed) are greater than 0.09

To investigate the relationship between alliance and outcome scores, regression analyses were performed using SPSS 15.0. Testing for main effects (analysis of variance (ANOVA) and *t*-tests) was performed using Microsoft Excel (Windows XP). For decisions of statistical significance, an alpha value of .05 was adopted. Family-wise error arising from conducting multiple comparisons was not controlled for in this study. Ignoring family-wise error in these analyses increased the likelihood of finding a difference between subgroups being compared, and increased the chances that a main effect would be detected, which was the main concern in this case. On the other hand, the possible consequence of not correcting for family-wise error is that apparent differences between subgroups could in fact be due to chance (Type I error). For this study, I adopted the more relaxed approach of not correcting for family-wise error in order to increase the likelihood that a main effect would be detected.

## **Ethics Board Approval**

The Svartberg RCT team was granted ethics approval in 1989 by the Samfunnstjenesteforskning (Community Research Services), Oslo, Norway and graciously allowed access to the secondary data to the present investigators. Approval to proceed with the present study was received by the Office of Research Ethics, Simon Fraser University, in December 2009.



## CHAPTER 4

### RESULTS

#### Normality of Alliance Data

In order to determine the normality of the HAq data distribution, I conducted a Normal Quantile Plot test for non-normality (critical value of  $\alpha = .05$ ) for HAq total scores from session #4 (HAqS4) and session #20 (HAqS20). Results for both HAqS4 ( $n = 49$ ),  $r = .98$ , and HAqS20 ( $n = 50$ ),  $r = .98$ ,  $p > .05$  sample data did not warrant rejection of the claim that these values came from a normally distributed population, and thus HAq data were assumed to be normal for the purposes of further analyses.

#### Assessment for Main Effects

HAq data were further scrutinized for main effects relating to patient gender, age, treatment type, and therapist in order to determine whether the data could be pooled in further analyses.

##### ***Patient Gender***

A two-sample  $t$  test (assuming unequal variance) for patient gender indicated that alliance scores of male patients in early therapy (HAqS4) ( $M = 48.25$ ,  $SD = 7.11$ ) and female patients ( $M = 49.32$ ,  $SD = 6.06$ ) did not differ significantly,  $t(45) = -.06$ ,  $p$ -value (two-tailed) = 0.57. Likewise, male patients in mid-therapy (HAqS20) ( $M = 51.52$ ,  $SD = 7.43$ ) and female patients ( $M = 53.67$ ,  $SD = 5.13$ ) did not differ significantly on this measure  $t(43) = -1.18$ ,  $p$ -value (two-tailed) = .24.

The study sample was further analyzed for gender effect within therapy type (STDP and CT). A two-sample *t*-test (assuming unequal variance) for patient gender in the STDP subgroup did not reveal significant differences in early therapy (HAqS4) between males ( $M = 47.30$ ,  $SD = 5.03$ ) and females ( $M = 48.93$ ,  $SD = 6.50$ ) did not differ significantly,  $t(22) = -.07$ ,  $p$ -value (two-tailed) = 0.50. In the STDP subgroup in mid-therapy (HAqS20), male patients ( $M = 52.36$ ,  $SD = 4.76$ ) and female patients ( $M = 54.85$ ,  $SD = 5.83$ ) did not differ significantly  $t(22) = -1.15$ ,  $p$ -value (two-tailed) = .26. A two-sample *t*-test (assuming unequal variance) for patient gender in the CT subgroup did not find significant differences in early therapy (HAqS4) between males ( $M = 48.93$ ,  $SD = 8.42$ ) and females ( $M = 49.82$ ,  $SD = 5.72$ ),  $t(23) = -.31$ ,  $p$ -value (two-tailed) = .76. In the CT mid-therapy (HAqS20) subgroup, male patients ( $M = 50.86$ ,  $SD = 9.14$ ) and female patients ( $M = 52.27$ ,  $SD = 3.98$ ) did not differ significantly  $t(19) = -0.52$ ,  $p$ -value (two-tailed) = .61. It should be noted here that the gender-therapy type subgroups were rather small and that gender by therapy type effects may be evident in a larger sample size.

### ***Patient Age***

There was a nonsignificant correlation between patient age upon entering the trial (pre) and alliance scores for both early,  $r(46) = .13$ ,  $p > .05$ , and mid-therapy  $r(45) = .05$ ,  $p > .05$ .

### ***Therapy Type***

A two-sample *t* test (assuming unequal variance) for therapy type indicated that alliance scores of patients in different treatment groups did not differ significantly at either of the time points (patients in STDP, HAqS4  $M = 48.25$ ,  $SD = 5.87$ ; patients in CT, HAqS4  $M = 49.32$ ,  $SD = 7.23$ ,  $t(46) = -0.57$ ,  $p$ -value (two-tailed) = 0.57; patients in STDP, HAqS20  $M = 53.71$ ,  $SD = 5.40$ ; patients in CT, HAqS20  $M = 51.48$ ,  $SD = 7.23$ ,  $t(44) = 1.22$ ,  $p$ -value (two-tailed) = .23.

### ***Therapist Allocation***

The main effect for therapist allocation was nonsignificant for both early and mid-therapy, HAqS4:  $F(13,35) = 1.51$ ,  $MSE = 36.47$ ,  $p$ -value = .16, and HAqS20:  $F(13,35) =$

1.35,  $MSE = 37.80$ ,  $p$ -value = .23. Thus, alliance scores of patients working with different therapist did not differ significantly at either of the time points. It should be noted, however, that for therapist allocation, power to find a main effect was lacking due to the cells in the analysis of variance (ANOVA) being poorly populated.

## Luborsky's Biphasic Alliance Model

### Confirmatory Factor Analyses

The parameter estimates of HAq scores from session 4 (Table 1) and session 20 (Table 2) are presented separately. Goodness of fit indices are presented in Table 3.

**Table 1. Parameter Estimates from a Confirmatory Factor Analysis of HAq-I data from Session 4**

HAq-I Item	Type 1	Type 2
Factor loadings		
1	.60 (0.25)	.00
2	.64 (0.53)	.00
3	.61 (0.77)	.00
4	.02 (1.49)	.00
5	-.05 (1.06)	.00
6	.86 (0.35)	.00
7	.76 (0.27)	.00
8	.57 (0.24)	.00
9	.00	.75 (0.24)
10	.00	.80 (0.31)
11	.00	-.11 (1.15)
Factor correlations		
Type 1	1.00	1.00
Type 2	1.00	1.00

Note. Values of .00 were fixed; error variance is in parentheses

**Table 2. Parameter Estimates from a Confirmatory Factor Analysis of HAq-I data from Session 20**

HAq-I Item	Type 1	Type 2
Factor loadings		
1	.64 (0.33)	.00
2	.82 (0.32)	.00
3	.57 (0.30)	.00
4	.58 (1.76)	.00
5	.68 (0.71)	.00
6	.29 (0.80)	.00
7	.28 (0.86)	.00
8	.28 (0.49)	.00
9	.00	.72 (0.38)
10	.00	.79 (0.52)
11	.00	.25 (1.31)
Factor correlations		
Type 1	1.00	0.68
Type 2	0.68	1.00

*Note.* Values of .00 were fixed; error variance is in parentheses

**Table 3. Goodness of Fit Indices for Luborsky's Two-Factor Model at Sessions 4 and 20**

HAq session	$\chi^2/df$	RMSEA		CFI	AGFI	$\chi^2/df$ ratio
		CI (90%)	<i>p</i>			
4	133.15/43	0.17; 0.25	.00	0.81	0.49	3.097
20	242.65/43	0.27; 0.35	.00	0.54	0.26	5.643

*Note.* RMSEA = root-mean-square-error of approximation,  
CFI = comparative fit index,  
AGFI = adjusted goodness-of-fit index.

As can be seen in Table 3, the CFA goodness-of-fit test statistics for the HAq-I for both the early and mid-therapy sessions provided little support for Luborsky's

theorized two stage model of the alliance, especially in the case of the first (Type 1) factor. For both sessions, the  $\chi^2/df$  ratio, the Comparative Fit Index (CFI), the Adjusted Goodness-of-Fit Index (AGFI), and the Root-Mean-Square-Error of Approximation (RMSEA) were well outside ranges indicative of a satisfactory fit. Of the eight items originally assigned to the Type 1 (*Perceived Helpfulness*) factor (items 1-8 on the HAq-I questionnaire), two items loaded above a value of .70, generally considered to indicate an acceptable correlation (Nunnally & Bernstein, 1994) in the early therapy session: Item 6 (*"I feel I can depend on the therapist."*) at .86 and Item 7 (*"I feel the therapist understands me."*) at .76. In the mid-therapy HAq-I, only one item loaded satisfactorily (.82) onto the Type 1 factor, Item 2 (*"I believe that my therapist is helping me."*). Item 5 (*"I can already see that I will eventually work out the problems I came to treatment for."*) approached the benchmark value at .68. The remaining Type 1 items exhibited lower than satisfactory factor loadings in both sessions; ranging from -.05 to .64.

In the case of the second factor (Type 2, Collaboration or Bond), more stability of loadings was evident. Luborsky's model assigns three items to the Type 2 factor (items 9-11 on the HAq-I questionnaire). For both early and mid sessions, Items 9 and 10 loaded above .70. Item 9 (*"I feel I am working together with the therapist in a joint effort."*) loaded consistently lower (.75 and .72 for early and mid sessions respectively) than Item 10 (*"I believe we have similar ideas about the nature of my problems."*), which loaded at .80 and .79 for early and mid sessions respectively. The third item in the Type 2 factor (Item 11 on the HAq-I questionnaire) exhibited very low loading values in both sessions (-.11 in the early session, and .25 in the mid-therapy session).

## **Comparison of Change Patterns of Type 1 and Type 2**

The hypothesis was that the HAq Type 2 subscale should exhibit a different degree of growth in comparison to Type 1, with Type 2 growing relatively more as therapy progresses. When the relative change  $(\text{HAq at } s\#20 - \text{HAq at } s\#4) / \text{HAq at } s\#4$  of Type 1 and Type 2 subscale scores from session 4 were compared to those of session 20, it was found that the mean change in Type 1 subscale scores did not differ significantly from that of Type 2 subscale scores ( $p$ -value = .99). These results do not support the notion that Type 2 develops differentially from Type 1 as therapy progresses.

## Alliance - Outcome Relationship

### *Alliance and Distress Due to Symptom Severity*

A series of linear regression analyses revealed that alliance scores from both early and mid-therapy were strong predictors of outcome in some instances but not in others.

SCL-90 Global Severity Index (GSI) scores at 6-months and 2-years follow-up were regressed onto HAq-I total scores from session 4 and session 20. The same analyses were repeated for GSI scores at 2-years follow-up with HAq-I items that relate to outcome removed (HAq NOC). Table 4 presents the regression results.

**Table 4. Summary of Regression Analyses of HAq total Scores and SCL-90 GSI Scores**

HAq session	Outcome measure	Adjusted $R^2$	B	SE(B)	Sig. ( $p$ )
HAqS4	GSI (6 mos)	.11*	2.23	0.58	.01
	GSI (2 yrs)	.20*	3.01	0.83	.01
HAqS4 NOC	GSI (2 yrs)	-.02	1.01	0.48	.49
HAqS20	GSI (6 mos)	.08*	2.15	0.66	.04
	GSI (2 yrs)	-.004	1.6	0.96	.35
HAqS20 NOC	GSI (2 yrs)	.06	1.79	0.66	.10

Note. \* indicates statistical significance; S4 = session 4; S4 NOC = session 4 outcome related items removed; S20 = session 20; S20 NOC = session 20 outcome related items removed; GSI = Global Severity Index; SE(B) = standard error of beta coefficient

Regression analyses were rerun after the patient sample was stratified by therapy type in order to investigate whether the different therapy approaches might be associated with a differential strength of the alliance-outcome relationship. Tables 5 and 6 summarize the results of the analyses relating HAq scores (with and without outcome-related items) and SCL-90 GSI scores.

**Table 5. Summary of Regression Analyses of HAq total Scores and SCL-90 GSI Scores for Patients Receiving Short-Term Dynamic Psychotherapy**

HAq session	Outcome measure	Adjusted $R^2$	B	SE(B)	Sig. ( $p$ )
HAqS4	GSI (6 mos)	.01	1.65	0.89	.29
	GSI (2 yrs)	.07	2.69	0.78	.19
HAqS4 NOC	GSI (2 yrs)	-.08	1.13	1.44	.78
HAqS20	GSI (6 mos)	.05	1.95	0.94	.17
	GSI (2 yrs)	-.09	0.51	1.47	.91
HAqS20 NOC	GSI (2 yrs)	-.06	0.08	1.19	.62

*Note.* \* indicates statistical significance; S4 = session 4; S4 NOC = session 4 outcome related items removed; S20 = session 20; S20 NOC = session 20 outcome related items removed; GSI = Global Severity Index; SE(B) = standard error of beta coefficient

**Table 6. Summary of Regression Analyses of HAq total Scores and SCL-90 GSI Scores for Patients Receiving Cognitive Therapy**

HAq session	Outcome measure	Adjusted $R^2$	B	SE(B)	Sig. ( $p$ )
HAqS4	GSI (6 mos)	.16*	2.65	0.78	.03
	GSI (2 yrs)	.18	3.01	1.15	.06
HAqS4 NOC	GSI (2 yrs)	.11	2.04	0.82	.12
HAqS20	GSI (6 mos)	.09	2.16	0.93	.17
	GSI (2 yrs)	-.003	1.98	1.32	.35
HAqS20 NOC	GSI (2 yrs)	.15	2.22	0.83	.08

*Note.* \* indicates statistical significance; S4 = session 4; S4 NOC = session 4 outcome related items removed; S20 = session 20; S20 NOC = session 20 outcome related items removed; GSI = Global Severity Index; SE(B) = standard error of beta coefficient

### **Alliance & Interpersonal Distress**

Inventory of Interpersonal Problems (IIP) sumscores at 6-months and 2-years follow-up were regressed onto HAq-I total scores from session 4 and session 20. Subsequently, similar analyses were repeated for IIP sumscores at 2-years follow-up

with HAq-I items that relate to outcome removed (HAq NOC). Table 7 presents the regression results.

**Table 7. Summary of Regression Analyses of HAq total Scores and IIP Sumscores**

HAq session	Outcome measure	Adjusted $R^2$	B	SE(B)	Sig. ( $p$ )
HAqS4	IIP (6 mos)	.15*	3.04	0.62	.001
	IIP (2 yrs)	.19*	3.11	0.82	.02
HAqS4 NOC	IIP (2 yrs)	-.03	1.33	0.47	.64
HAqS20	IIP (6 mos)	.09*	2.81	0.70	.03
	IIP (2 yrs)	.12*	3.01	0.87	.04
HAqS20 NOC	IIP (2 yrs)	.17*	2.64	0.60	.02

*Note.* \* indicates statistical significance; S4 = session 4; S4 NOC = session 4 outcome related items removed; S20 = session 20; S20 NOC = session 20 outcome related items removed; IIP = Inventory of Interpersonal Problems; SE(B) = standard error of beta coefficient

The stratification of the patient sample by therapy type was repeated for IIP sumscores in order to investigate whether the different therapy approaches might be associated with a differential strength of the alliance-outcome relationship. Tables 8 and 9 summarize the results of the analyses relating HAq scores (with and without outcome-related items) and IIP sumscores.

**Table 8. Summary of Regression Analyses of HAq total Scores and IIP Sumscores for Patients Receiving Short-Term Dynamic Psychotherapy**

HAq session	Outcome measure	Adjusted $R^2$	B	SE(B)	Sig. ( $p$ )
HAqS4	IIP (6 mos)	.09	2.83	0.97	.10
	IIP (2 yrs)	-.02	2.59	1.74	.41
HAqS4 NOC	IIP (2 yrs)	-.09	1.19	1.69	.96
HAqS20	IIP (6 mos)	.19*	3.33	0.93	.03
	IIP (2 yrs)	.19	3.51	1.55	.14



HAqS20 NOC	IIP (2 yrs)	.12	2.74	1.31	.22
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*Note.* \* indicates statistical significance; S4 = session 4; S4 NOC = session 4 outcome related items removed; S20 = session 20; S20 NOC = session 20 outcome related items removed; IIP = Inventory of Interpersonal Problems; SE(B) = standard error of beta coefficient

**Table 9. Summary of Regression Analyses of HAq total Scores and IIP Sumscores for Patients Receiving Cognitive Therapy**

HAq session	Outcome measure	Adjusted R <sup>2</sup>	B	SE(B)	Sig. (p)
HAqS4	IIP (6 mos)	.17*	3.28	0.84	.03
	IIP (2 yrs)	.24*	3.36	0.96	.04
HAqS4 NOC	IIP (2 yrs)	.19	2.57	0.70	.06
HAqS20	IIP (6 mos)	.01	2.41	1.02	.29
	IIP (2 yrs)	.07	2.76	1.12	.18
HAqS20 NOC	IIP (2 yrs)	.20	2.64	0.71	.05

*Note.* \* indicates statistical significance; S4 = session 4; S4 NOC = session 4 outcome related items removed; S20 = session 20; S20 NOC = session 20 outcome related items removed; IIP = Inventory of Interpersonal Problems; SE(B) = standard error of beta coefficient

## **CHAPTER 5**

### **DISCUSSION**

This study had two primary aims: (1) to examine Luborsky's biphasic alliance construct within the context of a random controlled trial comparing the effectiveness of two types of psychotherapy in a sample of patients with Cluster C personality disorders, and (2) to explore the relationship between alliance measured in early and mid-therapy, and outcome measured at 6-months and 2-years follow-up. The unique design aspects of the Svartberg RCT (Svartberg, Stiles, & Seltzer, 2004) (HAq-I administered at two time points during therapy and longer term follow-up) enabled the parallel exploration of Luborsky's biphasic alliance model and the relationship between alliance and both short and long-term outcome.

#### **Luborsky's Biphasic Alliance Model**

In this study, I searched for evidence of Type 1 and Type 2 alliance as proposed by Luborsky (1976) by conducting a confirmatory factor analysis (CFA) on HAq-I data collected at two time points on the same group of patients. I chose this method in order to assess whether patients' responses on an instrument that is purported to measure Type 1 and Type 2 alliance actually reflected two distinct components. I also statistically compared the change in Type 1 and Type 2 subscale scores from early to mid-therapy to assess whether they changed differentially as they have been theorized to do by Luborsky (1976).

Given the results of previous factor analytic studies of the HAq-I (De Weert-Van Oene et al., 1999; Hatcher & Barends, 1996; Hendriksen et al., 2010), I anticipated that the present CFA would likewise not support the model of the alliance that the HAq-I was designed to measure. Similar to the results of Hatcher and Barends' (1996) and Hendriksen's (2010) exploratory factor analyses (EFA) of the HAq-I, Items 9 and 10 in

the present study consistently loaded on the same factor across sessions, which is understandable given the collaborative nature of both items. Also similar to Hatcher and Barends' EFA, I found the low factor loading exhibited by Item 11 (*"I feel now that I can understand myself and deal with myself on my own"*). The consistent finding of a poor fit of Item 11 with the Type 2 alliance subscale is not surprising given that the item seems to have little to do with collaboration with the therapist. Indeed, this item was removed in the subsequent revision of the HAq-I (Luborsky et al., 1996).

Thus, the subscale of the HAq-I that was designed to measure Type 2 alliance obtained a small degree of support in the present study. Both of the collaboration-focused items (#9 and #10) consistently loaded onto the theorized collaboration factor; however, Type 2 alliance was hypothesized to strengthen over the course of therapy, and this was not evident in the present study sample.

If Type 2 alliance does indeed develop later in therapy, one would expect to see higher ratings of Type 2 alliance at mid-therapy compared to early therapy. In this study, both Type 1 and Type 2 alliance scores increased at mid-therapy and the difference between the two subscales was not statistically significant. The finding that Type 2 does not strengthen to any greater degree than Type 1 has also been reported by Bachelor and Salamé (2000) and Cailhol et al. (2009), though it is important to bear in mind that Cailhol and colleagues assigned some HAq-I items to Types 1 and 2 differently than Luborsky. The finding that Type 2 does not differ from Type 1 in its 'growth rate' is at odds with the theorized model and it suggests that either Type 2 alliance as originally conceived is not a fully valid construct, or that the HAq-I is not sensitive enough to measure this construct.

The results of both the confirmatory factor analyses and the analysis of growth patterns of Type 1 and Type 2 alliance in the study sample did not support the notion of a *biphasic* alliance in which one component of the alliance becomes stronger relative to the other at a particular stage of therapy. Thus, it would seem that at least this component of Luborsky's model of the alliance may need to be reconsidered or further investigated with a measure that is more sensitive to changes in the theorized Type 2 alliance.

## **Alliance – Outcome Relationship**

While the results of these analyses did not confirm the biphasic model of the alliance, the HAQ-I remains a useful tool for predicting outcome in psychotherapy. The regression analyses computed to investigate the association between HAQ-I scores and outcome revealed a number of surprisingly strong relationships. In light of previous studies establishing the predictive validity of the HAQ-I, and given that a substantial number of HAQ-I items that appear to be outcome measures in their own right (Hatcher & Barends, 1996), I expected to see a link between HAQ-I scores and outcome indices in this study. Intriguingly, however, even when HAQ-I items relating to outcome were removed from the analysis, there remained significant associations between HAQ-I total scores and outcome measure of interpersonal functioning (IIP).

### ***HAQ-I and Symptom Severity***

There was a medium to strong relationship between alliance measured in early and mid-therapy and symptom severity (GSI scores) at both short-term (6-months post) and long-term (2 years post). The strongest predictor of symptom severity was the HAQ-I total scores in early therapy (Session 4), which accounted for 20% of the variance of the GSI at 2 years post therapy. However, once the outcome-related items of the HAQ-I were removed from the analysis, it no longer predicted post therapy symptom severity on the GSI. Interestingly, when the patient sample was disaggregated into therapy types (STDP versus CT), a rather strong association was found between HAQ-I measured in early therapy and symptom severity at 6-months, only for the CT group (16% of variance explained), but this relationship was no longer apparent at the 2-year follow-up point. All other relationships between alliance and symptom severity at follow-up in the CT group were nonsignificant, which suggests that there is little substantive association between alliance and symptom severity in this group. Overall, the HAQ-I appears to possess predictive value for short-term symptom severity but it seems reasonable to conclude that this effect is mainly due to the presence of outcome-related items.

These results are similar to findings by Gunderson et al. (1997) in that early alliance as measured by the HAQ-I (outcome-related items removed) was not significantly associated with the GSI in the long-term. The team led by de Roten (2004)

found a significant relationship between HAq-I total score and symptom severity (GSI); however, they measured symptom severity at the fourth therapy session (early in therapy), which limited the finding's scope to the short-term, intra-therapy stage.

### ***HAq-I and Interpersonal Functioning***

A particularly intriguing finding was the fairly strong association between HAq-I in early and mid-therapy and interpersonal functioning (IIP). HAq-I scores obtained at both early and mid-therapy assessment points were predictive of IIP at short-term and long-term follow-up, with the variance accounted for ranging from 9-19%. Once the outcome-related HAq-I items were removed from the analysis, the HAq-I total score was still reliably correlated with the IIP at 2-years follow-up, with 17% of the variance in IIP accounted for by HAq-I at mid-therapy. When the patient sample was sorted by therapy type, early HAq-I was relatively strongly related to short and long-term interpersonal functioning for the CT group but not for the STDP group. The original HAq-I scores obtained mid-therapy predicted 19% of the variance of the IIP at six-months only for the STDP group. However, once the outcome-related items were removed (with only HAq NOC items remaining) the alliance-interpersonal functioning relationship was no longer statistically significant.

The rather strong link between mid-therapy alliance scores and long-term interpersonal functioning may be partly explained by the fact that both instruments share an interpersonal focus. The HAq-I, in effect, could be considered a measure of interpersonal functioning that specifically assesses the ability of the patient to collaboratively engage with others (in this case, the therapist). It could be, then, that patients with high HAq-I scores are those who are improving generally in the arena of interpersonal functioning, and they can be expected to be the ones who continue to function well in the longer-term. Of course, this hypothesis begs the question as to whether IIP score at mid-therapy is just as powerful as the HAq-I in predicting IIP at long-term follow-up and this hypothesis should be followed up on in a future study.

The interpersonally challenged nature of the sample population may also contribute to the apparent link between alliance in therapy and long-term interpersonal functioning. It might be that the HAq-I is a particularly strong predictor of interpersonal

functioning for populations for which interpersonal functioning is the main issue precisely because the HAq-I is a proxy measure of how well one 'gets on' with other people in general.

## **Limitations and Future Investigations**

There are some features of the present study that may limit the generalizability of the findings. First, the sample size was not large which precludes firm conclusions. Second, the outcome measures were few and are limited to symptom severity and interpersonal functioning and thus the findings relating to the alliance-outcome relationship should be limited to these domains. Third, the HAq-I in this study was a Norwegian translation of the original instrument. Finally, the original study did not set out to answer the research questions of the present study.

### ***Psychometrics of the HAq-I***

One might consider the pursuit of further study of the HAq-I to be unnecessary given that it was revised more than a decade ago to form the HAq-II; however, it is apparent that the HAq-I is still in relatively common use, especially in Europe. If the HAq-I continues to be used in research, special attention should be given to excising the outcome-related items or at least differentiating them from the items that are more closely related to the alliance proper.

Future investigators should also ensure that they use standardized scoring procedures when working with the HAq-I. It became evident during this study that there is a lack of clarity among researchers with respect to which questionnaire items are to be assigned to the two factors (Type 1 and Type 2 alliance) and the protocol used to calculate the total score. Some research groups assigned only the first 6-7 HAq-I items to the Type 1 subscale (e.g., Cailhol et al., 2009; de Roten et al., 2004); whereas others (e.g., Driessen et al., 2007; Bachelor & Salamé, 2000) followed Luborsky's assignment of the first eight items to Type 1, which has led to sometimes appreciable differences in average subscale scores.

With respect to the calculation of sumscores for the HAq-I, it was unclear what process researchers used to figure the value of total scores. The response scale used in the HAq-I uses negative integers for the negative response options (e.g., -2 = “No, I feel strongly that it is not true.”) and positive integers for the positive response options (+2 = “Yes, I feel strongly that it is true.”), but it does not include a zero. When calculating the total score, one could either allow response options with negative values to nullify those with positive values, so that an item response of -1 added to an item response of +1 would give a sum of zero. Alternatively, one could assign positive values to all response options so that all ratings are on the positive side of the number line, as did Bachelor and Salamé (2000) and Gunderson et al. (1997). So, for example, the most negative response option of -3 would be assigned a value of ‘1’, the next most negative response option (-2) would be assigned a value of ‘2’, and so on. The reason why this is important became apparent when I conducted the regression analyses using both the protocols described above and found that the ‘traditional’ protocol of allowing negative response options to nullify positive ones resulted in less variance in the distribution of HAq-I total scores and more volatility in change scores (i.e., difference between a total score from one session to the next) when patients increased their rating of items from negative to positive or vice versa. Future studies would benefit from assigning positive integers to the response values as this method increases variability in scores allowing for more precision in statistical testing.

### ***Alliance-Outcome Relationship***

A replication of the present study with a larger sample size would also increase the validity of the findings relating to the alliance-outcome relationship in this population. It would also be interesting to compare the alliance-outcome (IIP in particular) relationship in groups with different levels of interpersonal functioning to investigate whether interpersonal functioning plays a role in potentiating the predictive strength of the HAq-I on outcome. The findings relating to the differential predictive power of the HAq-I in groups receiving different forms of therapy warrants further investigation to determine whether there might be particular therapies in which the alliance is more or less predictive of outcome.

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## **Appendix.      Helping Alliance Questionnaire (HAq-I) Items**

Note: HAq-I items 1-5 and 11 were identified as being significantly related to outcome and were removed from some regression analyses, as identified in the main body of this paper.

1. I believe that my therapist is helping me.
2. I believe that the treatment is helping me.
3. I have obtained some new understanding.
4. I have been feeling better recently.
5. I can already see that I will eventually work out the problems I came to treatment for.
6. I feel I can depend on the therapist.
7. I feel the therapist understands me.
8. I feel the therapist wants me to achieve my goals.
9. I feel I am working together with the therapist in a joint effort.
10. I believe we have similar ideas about the nature of my problems.
11. I feel now that I can understand myself and deal with myself on my own (that is, even if the therapist and I were no longer meeting for treatment appointments).