

The Mediating Role of Insight for Long-Term Improvements in Psychodynamic Therapy

Paul Johansson and Per Høglend
University of Oslo

Randi Ulberg
Vestfold Mental Health Care Trust, Tønsberg, Norway

Svein Amlo
Asker og Bærum Hospital, Akershus, Norway

Alice Marble
University of Oslo

Kjell-Petter Bøgwald
Diakonhjemmet Hospital, Oslo, Norway

Øystein Sørbye
Ullevål Hospital, Oslo, Norway

Mary Cosgrove Sjaastad and Oscar Heyerdahl
Oslo, Norway

Objective: According to psychoanalytic theory, interpretation of transference leads to increased insight that again leads to improved interpersonal functioning over time. In this study, we performed a full mediational analysis to test whether insight gained during treatment mediates the long-term effects of transference interpretation in dynamic psychotherapy. **Method:** This study is a randomized clinical trial with a dismantling design. One hundred outpatients seeking psychotherapy for depression, anxiety, personality disorders, and interpersonal problems were randomly assigned to 1 year of weekly sessions of dynamic psychotherapy with transference interpretation or to the same type and duration of treatment with the same therapists but without the use of transference interpretation. Interpersonal functioning and insight were measured pretreatment, posttreatment, and 1 year and 3 years after treatment termination. **Results:** Contrary to common expectation, patients with a life-long pattern of low quality of object relations and personality disorder pathology profited more from therapy with transference interpretation than from therapy with no transference interpretation. This long-term effect was mediated by an increase in the level of insight during treatment. **Conclusions:** Insight seems to be a key mechanism of change in dynamic psychotherapy. Our results bridge the gap between clinical theory and empirical research.

Keywords: dynamic psychotherapy, transference interpretation, insight, long-term outcome

The field of psychotherapy research has made great advances in the last decades, and there are now several hundred studies showing the efficacy of different types of psychotherapy for a variety of disorders. However, efficacy studies do not tell us how or why treatment works, nor can they specify which therapeutic ingredi-

ents are efficacious. More research focused toward what underlies psychotherapy effects has been requested by reviewers (Johansson & Høglend, 2007; Kazdin, 2007; Kraemer, Wilson, Fairburn, & Agras, 2002). Dismantling designs can isolate effects of specific interventions and techniques (Borkovec, 1993). Moderator analyses provide a test of for whom therapy works. Mediator analyses provide a test of the mechanisms that putatively underlie intervention effects. Uncovering specific active ingredients, moderators, and mediators may improve clinical theory and help develop more efficient treatment models (Kazdin, 2007).

Transference has been a core concept in dynamic psychotherapy for over a century. S. Freud (1905/1953) originally regarded transference as a living reconstruction of the patient's repressed historical past "transferred" onto the relationship with the therapist. Later theorists have questioned the notion of transference as a pure enactment of early relationships, and have emphasized how transference is partly a new experience (Cooper, 1987). Dynamic psychotherapy is interpersonal in nature, and the transference is also influenced by the therapist. Additional concepts such as the therapeutic alliance and the real relationship with the therapist may be needed to account for the patient's reactions to the therapist

Paul Johansson, Per Høglend, and Alice Marble, Department of Psychiatry, Vinderen, University of Oslo, Oslo, Norway; Randi Ulberg, Department of Child and Adolescent Psychiatry, Vestfold Mental Health Care Trust, Tønsberg Norway; Svein Amlo, Department of Research and Education, Asker og Bærum Hospital, Akershus, Norway; Kjell-Petter Bøgwald, Department of Research and Education, Diakonhjemmet Hospital, Oslo, Norway; Øystein Sørbye, Adolescent Mental Health Clinic, Ullevål Hospital, Oslo, Norway; Mary Cosgrove Sjaastad and Oscar Heyerdahl, independent practice, Oslo, Norway.

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Correspondence concerning this article should be addressed to Paul Johansson, Department of Psychiatry, Vinderen, P.O. Box 85, Vinderen, N-0319 Oslo, Norway. E-mail: p.n.johansson@medisin.uio.no

(Ehrenreich, 1989; Gabbard & Westen, 2003). More recently, clinical theorists and researchers have relied on broader definitions of transference and transference interpretation that are more experience near. Like most empirical studies, we define transference interpretations as an interpretation with explicit linking to the patient–therapist interaction (Høglend, 1993b; Piper, Azim, Joyce, & McCallum, 1991). There is general agreement in the psychodynamic tradition that transference interpretations aim to establish connections, by cause or analogy, between internal conflicts, past or present objects, and the relationship to the therapist. Influential theorists maintain that the ongoing interaction between patient and psychotherapist is influenced by the patient’s past or current relationships and affective experiences. Therefore, focusing on the themes and conflicts that arise in the therapeutic relationship will have immediate affective resonance and illuminate the true nature of problems in the patient’s relationships outside of therapy (Kernberg, Diamond, Yeomans, Clarkin, & Levy, 2008; Strachey, 1934). Focus on transference can enable the patient (and therapist) to distinguish what is real in the therapeutic relationship from what are enactments influenced by earlier experiences. According to psychoanalytic theory, interpretation of transference may increase insight that again may lead to better interpersonal functioning (Gabbard & Westen, 2003; McGlashan & Miller, 1982; Messer & McWilliams, 2007; Strachey, 1934). Earlier naturalistic studies, however, have indicated that the frequency of transference interpretations has a nonsignificant or a negative correlation with treatment outcome (Høglend, 2004). Two studies have reported a negative correlation between a high frequency of transference interpretations and outcome within the subsample of patients with high Quality of Object Relations Scale (QOR) scores (Høglend, 1993a; Piper et al., 1991). Two studies reported a negative correlation between a low to moderate frequency of transference interpretations within the subsample of low QOR patients (Connolly et al., 1999; Ogrodniczuk, Piper, Joyce, & McCallum, 1999).

While the term *insight* has been used in the mental health field to describe patients’ recognition of the abnormality of their own symptoms, psychoanalytic use of the word has a more complex meaning. Sigmund Freud never used the word insight, but held the uncovering of unconscious material as a central curative factor. Anna Freud (1936) emphasized how insight into something previously unconscious also gives new meaning to psychic contents. Increased self-understanding has been considered a key mechanism of change throughout the history of psychoanalysis (Sandler, Dare, & Holder, 1973).

In the empirical literature, the term insight has been used to describe several related concepts, such as psychological mindedness (McCallum & Piper, 1990), as recognition of psychological difficulties (Rosenbaum, Friedlander, & Kaplan, 1956), and as awareness and understanding of one’s own behavioral patterns and motivations (dynamic insight; Luborsky, Crits-Christoph, Mintz, & Auerbach, 1988). A central problem in psychoanalytic literature seems to be the need to define the qualities that distinguish “true” or “emotional” insight from purely “intellectual” insight. According to some theorists, insight is only true when it is followed by therapeutic change. Insight and the desired therapeutic change are, however, frequently far apart in time (Høglend, Engelstad, Sørbye, Heyerdahl, & Amlo, 1994). Several authors have tried to avoid such difficulties by defining dynamic insight as a new awareness that sets off emotional responses that again leads to conscious

elaborations accompanied by appropriate affects (Reid & Fine-singer, 1952; Sandler et al., 1973). Insight gained through the therapist’s interpretation of transference may be particularly valuable in that it facilitates integration of cognition and affect more effectively. Experiencing insight in the context of transference analysis tend to make strong and possibly lasting impressions on patients, while a focus exclusively on relationships outside of therapy may invite more intellectual speculation (Kernberg et al., 2008; Messer & McWilliams, 2007; Strachey, 1934).

Given the central position of insight in clinical theory, the empirical research investigating the role of insight in dynamic psychotherapy is surprisingly scarce. The findings have been mixed. There is some evidence that insight gained during treatment may be associated with a favorable outcome (Høglend et al., 1994; Kivlighan, Multon, & Patton, 2000). Others have been unable to detect this association (e.g., Luborsky et al., 1980). No studies, however, have tested all steps of mediator methodology (Johansson & Høglend, 2007).

This study is the first dismantling, randomized controlled trial to test the long-term effects of transference interpretation. With this design, a treatment effect is the effect of transference interpretations, not overall treatment effects. The first a priori hypothesis in the study protocol was that transference interpretation will have specific long-term effects. We reported that the subsample of patients with low quality of object relations benefited significantly more from therapy with transference interpretation than without (Høglend et al., 2006). This effect was sustained during a 3-year follow-up period (Høglend et al., 2008). Patients with mature relationships and greater psychological resources benefited equally well from both treatments.

In the current article, we address the second a priori hypothesis (using the same patient sample): Insight acts as a mediator (mechanism) for the long-term effects of transference interpretation.

Method

The methods used in this study have been described previously in great detail (Høglend et al., 2006, 2008). Here, we present a brief description.

Patients

From 1993 to 2001, 122 patients were referred to the study therapists by primary care physicians, private specialist practitioners, and public outpatient departments. These patients sought psychotherapy due to depressive disorders, anxiety disorders, personality disorders, and interpersonal problems. The study therapists assessed the patients for eligibility. Patients with psychosis, bipolar illness, organic mental disorder, or substance abuse were excluded. Patients with mental health problems that caused long-term inability to work (>2 years) were also excluded. Written informed consent was obtained from each of the 100 participants included in the study.

Treatment Conditions and Therapists

The Regional Ethics Committee, Health Region 1, Norway, approved the study protocol. Fifty-two patients were randomly assigned to dynamic psychotherapy with low to moderate use of

transference interpretation (transference group). Forty-eight patients were assigned to dynamic psychotherapy without transference interpretation (comparison group).

Patients were assigned to one of seven therapists based on availability. The clinical research team consisted of six psychiatrists and one clinical psychologist, all of whom had 10–25 years of experience in practicing psychodynamic psychotherapy. Four were fully trained psychoanalysts. Each therapist treated 10–17 patients in the study. All therapists treated patients from both groups. The patients were offered 45-min sessions weekly for 1 year. All sessions were audio recorded. A treatment manual was used (Høgglend, 1990). Manuals in dynamic psychotherapy are manuals of principles, not step-by-step procedures. Our treatment model was based on general psychodynamic treatment techniques, such as focus on affects; exploration of warded off material; focus on current relationships, past relationships, and the therapeutic relationship; interpretations of wishes, needs, and motives; and the principles outlined by Malan and Ferruccio (1992) and Sifneos (1992). In the pilot phase of the study, the therapists were trained for up to 4 years to enable them to provide treatment with a low to moderate frequency of transference interpretations (one to two per session) and treatment without such interpretations with equal ease and mastery.

For the transference group, the following specific techniques were prescribed: (a) The therapist was to address transactions in the patient–therapist relationship; (b) the therapist was to encourage exploration of thoughts and feelings about the therapy and therapist including repercussions on the transference by high therapist activity; (c) the therapist was to encourage the patient to discuss how he/she believed the therapist might feel or think about him/her; (d) the therapist was to include himself explicitly in interpretive linking of dynamic elements (conflicts), direct manifestations of transference, and also allusions to the transference; and (e) the therapist was to interpret repetitive interpersonal patterns (including genetic interpretations) and link these patterns to transactions between the patient and the therapist. The first three techniques are not interpretations per se but preparatory interventions. In contrast, in the comparison group, the therapist consistently focused on interpersonal relationships outside of therapy as the basis for similar interventions and did not link these patterns to the interaction between the patient and the therapist. For both treatment groups, psychotherapy was exploratory in nature: Patients were encouraged to explore sensitive topics that often involved uncomfortable emotions, and the therapist abstained from giving advice, praise, or reassurance. The moderate level of transference interpretations recommended in the treatment manual was based on 10 previous studies. The level of transference interpretations in those studies varied from one to six, on average per session (Høgglend, 2004). The patients were not informed about which technique was used or the study hypotheses. They were told that the aim of this study was to explore the long-term efficacy of psychodynamic psychotherapy.

Therapist Effects and Treatment Fidelity

We searched for therapist effects using therapist as fixed (categorical) factor. With regard to outcome, all parameters for therapist were nonsignificant: therapist, $F(6, 87) = 1.3, p = .25$; Therapist \times Time, $F(6, 116) = 0.54, p = .78$; Therapist \times Time \times

Treatment, $F(7, 88) = 0.75, p = .63$. We could not detect any differences in effectiveness between therapists on either interpersonal functioning or insight. Therapist effects are generally small in studies using treatment manuals and experienced and specifically trained therapists. It should be noted, however, that this study did not have sufficient power to detect small to moderate differences between therapists.

Treatment fidelity was assessed by three blind, independent raters, using a manual for process ratings (Høgglend, 1994). The raters, two psychiatrists and one psychologist, had 15–30 years of clinical experience as dynamic psychotherapists. Two of them were fully trained psychoanalysts. The training period for the raters included 15 full sessions from each treatment. We used a global rating method rather than rating the exact frequency of different interventions. The frequency of a certain intervention does not necessarily give a valid measure of how important this type of intervention was in a given session. Both how clearly an intervention is offered and how much it is emphasized should be given weight in the rating process. All items in the manual therefore use a 5-point Likert scale ranging from 0 (*not at all*) to 4 (*very much*). Four or five full sessions of each therapy (452 sessions) were rated. Treatment integrity was excellent (Bøggwald, Høgglend, & Sørbye, 1999; Høgglend et al., 2006, 2008). The only difference between the two treatments was use of transference interpretation. The average score was 1.7 ($SD = 0.7$) in the transference group, indicating moderate use of transference work, and 0.1 ($SD = 0.2$) in the comparison group, indicating nearly no use at all, $t(58.2) = 14.8, p < .005$. The average use of supportive interventions was low and equal in the two treatment groups. The therapists' skill in delivering the interventions was high and equal in the two treatment groups.

Assessments

Before randomization each patient had a 2-hr semistructured psychodynamic interview, modified from Sifneos (1992) and Malan and Ferruccio (1992), with an independent evaluator. The interview was audio recorded, and also two other clinicians rated the interview using the QOR (Høgglend, 1993a; Piper et al., 1991) and the Psychodynamic Functioning Scales (Høgglend et al., 2000). The Psychodynamic Functioning Scales were also used in post-treatment assessments, and at the 1- and 3-year follow-ups. The raters were independent (i.e., not the patient's therapist) and blind with regard to treatment group. No structured interview was used in this study to determine Axis I diagnoses. These diagnoses were based on the clinical history and assessment of background variables by the patient's therapist. Diagnoses according to the *Diagnostic and Statistical Manual of Mental Disorders* (3rd ed., rev.; *DSM-III-R*; American Psychiatric Association, 1987) criteria were discussed before randomization until consensus was reached (Spitzer, 1983). Axis II diagnoses were determined before the start of therapy by the patient's therapist, using the *Structured Clinical Interview for DSM-III-R (SCID-II)*; Spitzer, Williams, Gibbon, & First, 1990). All therapists were trained to use SCID-II.

Outcome Measure

The Psychodynamic Functioning Scales uses six scales, with the same format as the Global Assessment of Functioning, to measure

psychological functioning over the 3 previous months. Three of the scales measure interpersonal aspects: Quality of Family Relationships, Quality of Friendships, and Quality of Romantic/Sexual Relationships. The other three measure intrapersonal functioning: Tolerance for Affects, Insight, and Problem Solving Capacity. According to psychoanalytic theory, the goal of transference interpretation is sustained improvement of the patients' relationships outside of therapy (McGlashan & Miller, 1982). Therefore, we use the mean value of the three subscales for interpersonal functioning as the primary outcome measure. Interrater reliability (intraclass correlation coefficient) for the average scores of three raters on the interpersonal scales was 0.92. Aspects of content validity, internal domain construct validity, discriminant validity from symptom measures, and sensitivity for change in dynamic therapy have been established in different samples of patients and evaluators (Bøglwald & Dahlbender, 2004; Hagtvet & Høglend, 2008; Hersoug, 2004; Høglend, 2004; Høglend et al., 2000).

Moderator and Mediator

The primary moderator, QOR, was chosen a priori. The QOR measures the patient's life-long tendency to establish relationships with others, ranging from mature to primitive, using three 8-point scales. The cutoff score we chose for differentiating high versus low QOR patients in this study was 5.1, the mean score of all 100 patients. QOR scores above the cutoff indicate evidence of at least one stable and mutual interpersonal relationship in the patient's history. Scores below the cutoff indicate a life-long history of less gratifying relationships characterized by less stability, less emotional investment, and need for dependency or overcontrol. Sixty percent of the patients with low QOR scores had one or more personality disorders in this study. Interrater reliability for the average QOR scores of three raters was 0.84.

Insight was the primary mediator, chosen a priori. No standard self-report measures of dynamic insight are available. Self-report scales of psychological capacities may be more sensitive to rater bias and less sensitive in detecting change. The most valid and reliable assessments may be clinical ratings based on detailed interviews, using an operationalized measure, and several experts on each evaluation. The clinician-rated measure of insight emphasized both cognitive and emotional understanding of the dynamics of inner conflicts. It also assessed the patient's understanding of interpersonal patterns, and their connection to past experiences. The assessment also took into account the patient's ability to understand and describe his/her own vulnerability, reactions to stress, and coping abilities (see the Appendix). Interrater reliability for the average insight scores of three blind, independent raters was 0.80. Test-retest reliability over 1 year after treatment was 0.74. The correlation with personality disorder pathology was -0.43 . Correlation with a different measure of dynamic self-understanding at baseline (Høglend, 1979; Sifneos, 1992) was 0.80. This measure used four 8-point clinician-rated scales: Psychological Understanding of Self, Ability to Learn From Experience, Psychological Mindedness, and Tolerance and understanding of Painful Affects. Interrater reliability for average scores of three raters was 0.74. The Insight scale is a single-item, global measure, like the Global Assessment of Functioning. Several studies have

indicated that global scales rated by experts may be equal and sometimes superior to test batteries with many subscales (Regehr, MacRae, Reznick, & Szalay, 1998).

Moderated Mediation

Methodologically the strongest case for mediation in randomized clinical trials is made when five conditions are satisfied. Establishing mediation in accordance with the model proposed by Baron and Kenny (1986) is a step-wise procedure, involving statistical demonstration of four associations. We utilized an extension, adapted for longitudinal data, of the model for moderated mediation outlined by Muller, Judd, and Yzerbut (2005), since there was a moderated treatment effect (the treatment effect was significant only for low QOR patients). The four associations that must be statistically demonstrated to establish mediation of the moderated treatment effect are as follows:

1. Transference interpretation must be significantly related to a change of interpersonal functioning over time (direct treatment effect).
2. Transference interpretation must be significantly related to change in insight during treatment (treatment effect on the mediator).
3. When change in insight during treatment is included in the step one equation, it must be significantly related to interpersonal functioning over time (effect of the mediator on outcome).
4. When the effect of insight is controlled for (included in the statistical model), the treatment effect on interpersonal functioning is eliminated or significantly weakened (residual treatment effect). This indicates that insight accounts for (explains) all or some of the treatment effect.

We utilized the method proposed by Holmbeck (2002) to test the statistical significance of the mediational pathway by computing z tests for the indirect effect (Step 2 \times Step 3). This test is mathematically equivalent to testing whether the residual effect of treatment on outcome (Step 4) is significantly lower than the direct effect on outcome (Step 1).

These statistical demonstrations cannot establish causality, as they do not exclude the possibility that change in the outcome variable precedes and causes change in the mediator variable. In order to strengthen the evidence for a causal relation, one must assess temporality (Step 5). Methods proposed to address this include assessments of both the mediator and outcome at several time points during treatment (Kazdin, 2007; Kraemer et al., 2002) or comparing changes in both mediator and outcome during and after treatment (Stice, Presnell, Gau, & Shaw, 2007).

Statistical Analysis

A standard power calculation (endpoint analysis; Altman, 1993), indicated that a moderate effect size of 0.55 could be detected for alpha levels of .05 with a power of 0.80 in the whole

sample of 100 patients. An alpha level of .10 was selected a priori in the study protocol for the moderator and mediator analyses and in the subsample analyses in order to balance the risk of Type II errors (Altman, 1993; Kraemer et al., 2002). Within the subsamples of high QOR patients ($n = 53$) and low QOR patients ($n = 46$), this gave a power of about 0.65 for detecting moderate effect sizes of 0.55. One outlier in the transference group was deleted from analyses of longitudinal data as it became clear during treatment that this patient had been abusing sedatives and painkillers over many years. Including this case also significantly worsened goodness-of-fit measures (change in $-2 \log$ likelihood).

Longitudinal analyses were performed on 99 patients (intention to treat analyses). We used linear mixed models to analyze longitudinal data (SPSS Version 16.0, 2008). Subject was treated as a random effect. Randomly distributed intercepts and slopes were fitted for each patient. The highest rate of improvement was during therapy, with diminishing returns over time. Time was coded 1, 2, 3, and 5, with one step for each year, and transformed to a natural logarithm. Time at baseline was thereby 0. The log transformation of time fit the data discernibly better than a linear time slope. Intercept and time were treated as both random and fixed effects, while treatment group (coded 1, 0) was treated as a fixed effect. A variance component covariance matrix yielded the best goodness-of-fit measures.

In the analysis of moderated treatment effects on outcome (Step 1 in establishing mediation) and the analysis of moderated treatment effects on mediator (Step 2) the following composite model equation was used: $Y_{ij} = B_0 + B_1 \text{TIME}_{ij} + B_2 (\text{TIME}_{ij} \times \text{TREATMENT}_i) + B_3 \text{QOR}_i + B_4 (\text{QOR}_i \times \text{TREATMENT}_i) + B_5 (\text{QOR}_i \times \text{TIME}_{ij}) + B_6 (\text{QOR}_i \times \text{TIME}_{ij} \times \text{TREATMENT}_i) + (\zeta_{0i} + \zeta_{1i} \text{TIME}_{ij} + \varepsilon_{ij})$. Y_{ij} is change of interpersonal functioning over time from pretreatment to the 3-year follow-up in Step 1, and Y_{ij} is change of insight from pretreatment to posttreatment in Step 2. B_0 – B_6 are the fixed effects, and ζ_{0i} , $\zeta_{1i} \text{TIME}_{ij}$, and ε_{ij} are random intercept, random time, and error term, respectively. By design, treatment group means were equal at baseline. The statistical model forced both treatments to have a common intercept. This model is more powerful and recommended for analysis of randomized clinical trials (Fitzmaurice, Laird, & Ware, 2004; Kenny et al., 2004).

In the analyses of moderated mediation (Step 3 and 4), the following composite model equation was used: $Y_{ij} = B_0 + B_1 \text{TIME}_{ij} + B_2 (\text{TIME}_{ij} \times \text{TREATMENT}_i) + B_3 \text{QOR}_i + B_4 (\text{QOR}_i \times \text{TREATMENT}_i) + B_5 (\text{QOR}_i \times \text{TIME}_{ij}) + B_6 (\text{QOR}_i \times \text{TIME}_{ij} \times \text{TREATMENT}_i) + B_7 \text{INSIGHT}_i + (\zeta_{0i} + \zeta_{1i} \text{TIME}_{ij} + \varepsilon_{ij})$. Y_{ij} is change of interpersonal functioning over time from pretreatment to the 3-year follow-up.

The relevant parameters are B_2 , the treatment effect (difference in slopes between the two treatment groups), and B_6 , the moderator term that tests whether the treatment effect changes with different levels of the moderator. B_7 is the effect of mediator on outcome, after controlling for treatment effects.

QOR was centered at the mean score within the low QOR subsample (QOR = 4.4). Thus, B_2 (the Time \times Treatment interaction term) tests the effects of transference interpretation for the average (typical) low QOR patient (QOR = 4.4), on outcome (Step 1) and on mediator (Step 2). In Step 3 and Step 4, B_2 (the Time \times Treatment term) tests the residual treatment effect on outcome when controlling for the mediator. QOR was also cen-

tered at the mean score within the high QOR subsample (QOR = 5.6). Thus, B_2 (Time \times Treatment) tests the effect of transference interpretation for the average (typical) high QOR patient (QOR = 5.6), on outcome (Step 1) and on mediator (Step 2).

Since a treatment effect, that is the effect of transference interpretation, was present only among patients with low scores on the QOR, we assessed temporality (Step 5) by examining the low QOR patients in the transference group ($n = 26$). If linear development of both outcome and mediator is assumed, raw change scores translate directly to slopes of change. A steeper slope of change in the mediator compared to the slope of change in the outcome would indicate that the mediator changed faster than the outcome.

Results

Figure 1 shows the flow of patients in the study. Five patients in the comparison group dropped out of therapy before Session 15.

Table 1 shows pretreatment patient characteristics. We could detect no significant differences in patient characteristics between the two treatment groups at baseline, except that patients in the comparison group rated themselves as somewhat more optimistic than patients in the transference group.

Analysis of Moderated Mediation

Step 1: Establishing a moderated effect of transference interpretation on long-term changes in interpersonal functioning. In the whole study sample, there was no overall difference in long-term outcomes between the two treatments. A positive treatment effect (Time \times Treatment) emerged when including the moderating variable QOR centered at 4.4 (QOR = 4.4). The long-term effect of transference interpretation on interpersonal functioning from pretreatment to the 3-year follow-up for the average (typical)

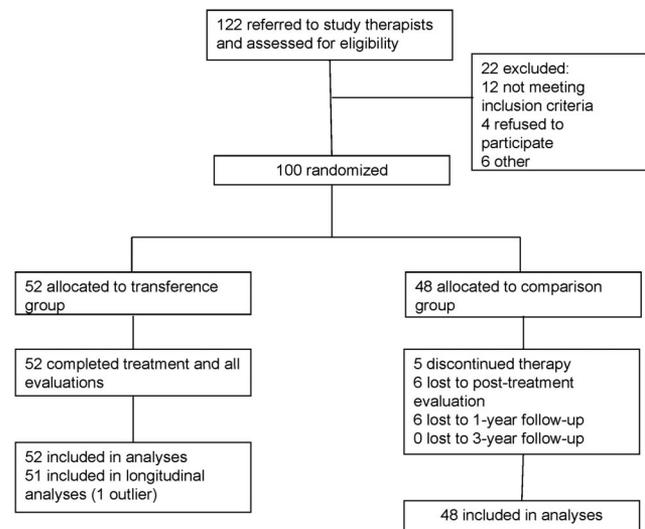


Figure 1. Patient flow in the randomized controlled trial. The transference group received 1 year of weekly dynamic psychotherapy with transference interpretation. The comparison group received 1 year of weekly dynamic psychotherapy without transference interpretation.

Table 1
Pretreatment Characteristics of 100 Patients Receiving 1 Year of Dynamic Psychotherapy With or Without Transference Interpretation

Characteristic	Transference (<i>n</i> = 52)		Comparison (<i>n</i> = 48)		Total (<i>N</i> = 100)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Age	37.8	8.7	35.9	9.9	36.9	9.3
Education in years	15.0	2.4	15.0	2.5	15.0	2.5
Quality of Life ^a	36.7	20.0	34.9	18.7	35.8	19.3
Expectancy ^b	8.2	2.2	8.4	2.4	8.3	2.3
Motivation ^c	5.4	0.6	5.4	0.6	5.4	0.6
QOR ^d	5.1	0.8	5.1	0.8	5.1	0.8
	<i>N</i>	%	<i>N</i>	%	<i>N</i>	
Female sex	26	50	30	63	56	
Single marital status	20	38	26	54	46	
Employed	42	81	35	73	77	
Axis I diagnosis						
Depressive disorders	29	56	29	60	58	
Anxiety disorders	19	37	15	31	34	
Adjustment reaction	2	4	3	6	5	
Other	7	13	7	15	14	
No Axis I diagnosis	9	17	9	19	18	
Axis II diagnosis						
General criteria for personality disorder	23	44	23	48	46	
Avoidant	6	12	5	10	11	
Dependent	1	2	1	2	2	
Obsessive compulsive	5	10	5	10	10	
Passive aggressive	2	4	1	2	3	
Paranoid	3	6	0	0	3	
Histrionic	1	2	1	2	2	
Narcissistic	2	4	1	2	3	
Borderline	1	2	2	4	3	
Personality disorder not otherwise specified	8	15	10	21	18	
Depressive	3	6	5	10	8	
Antisocial	1	2	0	0	1	
Multiple personality disorder	10	19	9	19	19	
Axis III diagnosis (somatic disorders)	6	12	5	10	11	

Note. From Table 1 in "Transference Interpretations in Dynamic Psychotherapy: Do They Really Yield Sustained Effects?" by P. Høglend et al., 2008, *American Journal of Psychiatry*, 165, p. 765. Copyright 2008 by American Psychiatric Publishing. Reprinted with permission.

^a Formal education. ^b Visual analog scale 1–100. ^c Motivation for active change and self-understanding. ^d Quality of Object Relations (QOR) Scale—life-long pattern.

low QOR patient was significant, $F(1, 95) = 3.1, p = .08$. The treatment effect was somewhat stronger for outcome up to the 1-year follow-up, $F(1, 95) = 4.3, p = .04$. The moderator term (Time \times Treatment \times QOR) indicated that the differences in slopes for treatment and control groups (the treatment effect) increased with lower levels of the QOR, but the change was not statistically significant, $F(1, 124) = 2.3, p = .15$.

Table 2 shows the descriptive statistics over time for interpersonal functioning within the low QOR subsample ($n = 46$). The between-groups effect sizes (Cohen's d) in this subsample at posttreatment, 1-year follow-up, and 3-year follow-up were 0.40, 0.52 and 0.32, respectively. Among low QOR patients, 10 of 26 patients (38%) in the transference group and four of 20 patients (20%) in the comparison group were recovered (had achieved clinically significant change; Jacobson & Truax, 1991) at posttreatment. The numbers were 14 (54%) and eight (40%), respectively, at 3-year follow-up.

When QOR was centered at the mean score within the high QOR subsample (QOR = 5.6) the treatment effect (Time \times

Treatment) for the average (typical) high QOR patient was non-significant and almost zero, $F(1, 95) = 0.001, p = .97$. Table 2 shows descriptive statistics over time for interpersonal functioning within the high QOR subsample ($n = 53$). Among patients with high QOR scores, the patients in both treatment groups responded equally well.

Patients were encouraged not to seek additional treatment during the first year after treatment termination. In the subsample of patients with low scores on the QOR ($n = 46$), about 20% of the patients in both treatment group used antidepressant medication before, during, or after psychotherapy. We could detect no significant differences in positive and negative life events during the follow-up period (Høglend et al., 2008). However, within the subsample of patients with low QOR scores, 11 of 20 patients (55%) in the comparison group received treatment by mental health specialists, versus four of 26 (15%) in the transference group, $\chi^2(1) = 8.1, p = .004$, between 1-year follow-up and 3-year follow-up. In the high QOR sub-

Table 2
Descriptive Statistics Over Time on Interpersonal Functioning

Outcome variable	Low QOR				High QOR			
	Transference group (<i>n</i> = 26)		Comparison group (<i>n</i> = 20)		Transference group (<i>n</i> = 25)		Comparison group (<i>n</i> = 28)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Before treatment	62.2	4.2	62.0	5.7	67.5	5.1	68.5	4.3
After treatment	68.0	5.2	65.6	6.8	72.4	5.0	73.6	5.4
1-year follow-up ^a	69.8	5.8	66.3	6.7	73.3	4.5	73.1	4.8
3-year follow-up	71.7	6.1	70.3	6.6	73.9	5.5	74.3	5.1

Note. QOR = Quality of Object Relations Scale—life-long pattern.

^a $t(44) = 1.8, p = .08$.

sample, there were no differences between the treatment groups in use of health service resources.

Step 2: A moderated effect of transference interpretation on change in insight during one year of psychotherapy. A substantial positive effect of transference interpretation on insight during treatment emerged when including the moderating variable QOR centered at 4.4 (QOR = 4.4). The Time \times Treatment term for the average (typical) low QOR patient was significant, $F(1, 145) = 10.0, p = .002$. The moderator term (Time \times Treatment \times QOR) showed that the effect of transference interpretation on insight increased significantly with lower scores on QOR, $F(1, 112) = 3.5, p = .06$. The effect of transference interpretation on insight during treatment for the average (typical) high QOR patient (QOR = 5.6) was almost zero and nonsignificant, $F(1, 387) = 0.1, p = .72$.

Table 3 shows the descriptive statistics over time for insight in the low QOR subsample. The between-groups effect sizes were 0.65, 0.67, and 0.50 at posttreatment, 1-year follow-up, and 3-year follow-up, respectively. Table 3 also shows the descriptive statistics over time for insight in the high QOR subsample.

Figure 2 illustrates the results reported above in the low QOR subsample. The transference group improves significantly more than the comparison group during the first 2 years of the study. During the last 2 years, the difference diminishes, probably due to substantially more additional treatment in the comparison group. The treatment effect on insight is strong during treatment but does not increase after that. Figure 3 illustrates the absence of any

treatment effects (differences in slopes) on outcome and on mediator in the high QOR subsample.

Steps 3 and 4: A change in insight during treatment was associated with long-term change in interpersonal functioning, and the direct treatment effect was weakened or eliminated when insight was accounted for in the analysis. When insight was included in the statistical model used in Step 1, there was a significant effect of change of insight during treatment on long-term improvement of interpersonal functioning, $F(1, 162) = 87.3, p < .001$, and the treatment effect for low QOR patients (QOR = 4.4) from Step 1 was no longer significant, $F(1, 95) = 0.29, p = .60$.

Figure 4 summarizes the estimated treatment effects for the typical low QOR patient in the four statistical steps in the mediation model. The treatment parameters estimated are the effects of transference interpretation in patients with QOR score = 4.4.

Sixty percent of the direct effect of transference interpretation on outcome variance for the typical low QOR patient was accounted for by the indirect effect of insight (mediational pathway). The mediational pathway (Step 1 \times Step 2) was statistically significant, $z = 2.55, p = .005$, that is, the residual effect of transference interpretation on outcome was significantly lower than the direct effect on outcome.

Step 5: Change in insight occurred prior to improvement in interpersonal functioning. In the fifth step, we attempted to rule out the possibility that an increase in insight was in fact caused

Table 3
Descriptive Statistics on Insight Over Time

Mediator variable	Low QOR				High QOR			
	Transference group (<i>n</i> = 26)		Comparison group (<i>n</i> = 20)		Transference group (<i>n</i> = 25)		Comparison group (<i>n</i> = 28)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Before treatment	62.1	4.1	61.8	5.5	63.3	5.3	64.5	4.6
After treatment ^a	71.8	6.7	66.7	8.7	72.8	6.2	73.5	6.0
1-year follow-up ^a	71.5	6.3	67.0	7.7	72.3	4.5	72.9	6.4
3-year follow-up ^b	73.9	6.5	70.5	6.7	73.8	4.6	74.3	6.1

Note. QOR = Quality of Object Relations Scale—life-long pattern.

^a $t(44) = 2.2, p = .03$. ^b $t(44) = 1.7, p = .10$.

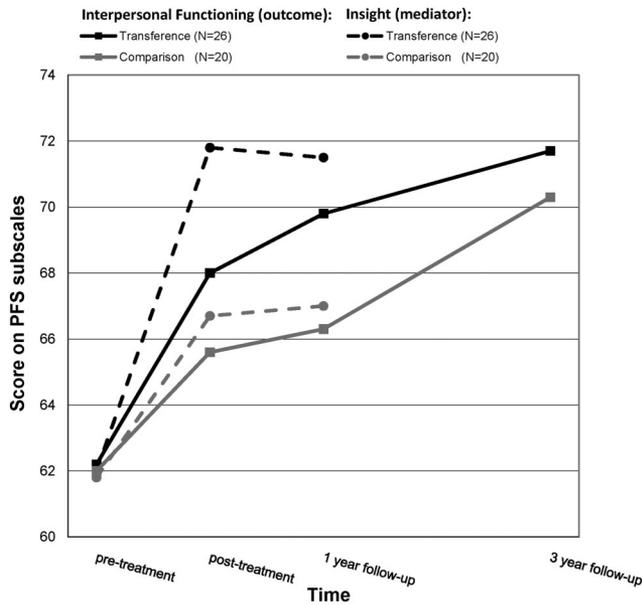


Figure 2. Descriptive mean trajectories of the mediator and outcome scores over time within the subsample of patients with low scores on the Quality of Object Relations Scale ($n = 46$). Interpersonal functioning (solid lines) and insight (dotted lines) for the transference group (black lines) and the comparison group (gray lines). PFS = Psychodynamic Functioning Scales.

by improved interpersonal functioning. Of the 26 patients in the transference group with low scores on the QOR, 18 (69%) changed more (faster) on the Insight scale than on the interpersonal scales during the 1-year treatment period. During the 1 year after treat-

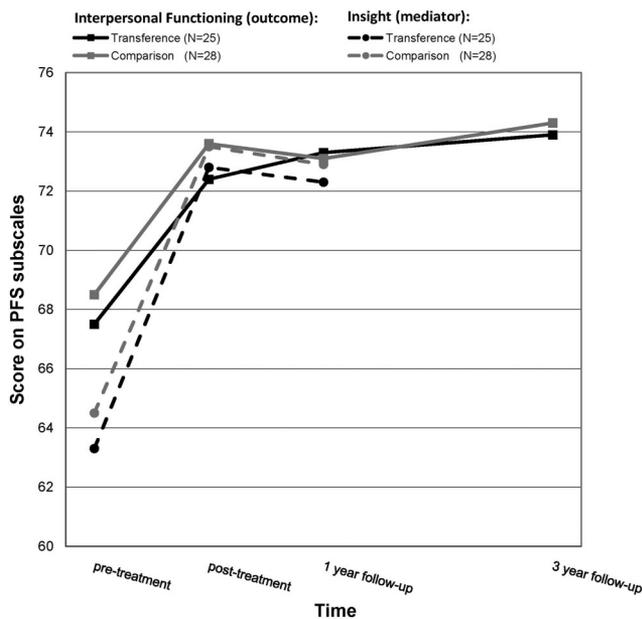


Figure 3. Descriptive mean trajectories of the mediator and outcome scores over time within the subsample of patients with high scores on the Quality of Object Relations Scale ($n = 53$). Interpersonal functioning (solid lines) and insight (dotted lines) for the transference group (black lines) and the comparison group (gray lines).

Moderated mediation

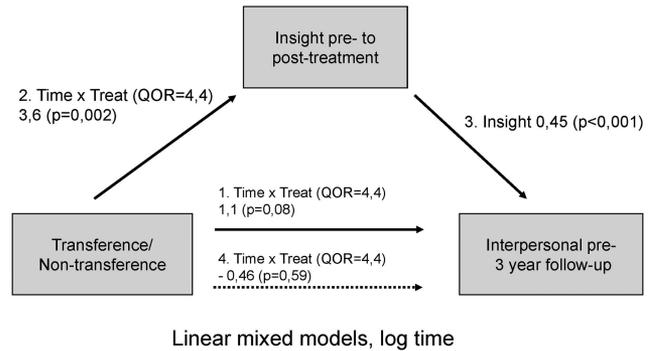


Figure 4. The four statistical steps in the mediation model. Treatment effects studied are the estimated effect of transference interpretation in patients with Quality of Object Relations (QOR) Scale score = 4.4.

ment, only eight (31%) of the same patients changed more on the Insight scale than on the interpersonal scales, $\chi^2(1) = 7.6, p = .006$ (see Figure 2). The figure illustrates how insight changed more than interpersonal functioning during treatment in the low QOR transference group. During the follow-up period, interpersonal functioning continued to improve, while development of insight after treatment termination was almost flat.

Discussion

Our study is the first, as far as we know, to show that a specific theory derived mediator (insight) explains a substantial proportion of the long-term effects of a specific technique (transference interpretation) in psychotherapy.

Few studies have been successful in demonstrating that the mediator changes prior to outcome (Johansson & Høglend, 2007; Kazdin, 2007; Kraemer et al., 2002; Manne et al., 2008; Wilson, Fairburn, Agras, Walsh, & Kraemer, 2002). In this report, we provided some evidence that insight changed before interpersonal functioning. Among low QOR patients, insight increased dramatically during treatment in the transference group but did not change much during the following years, whereas interpersonal functioning continued to improve.

Transference interpretations did not predict outcome for patients with high QOR scores. One may speculate that healthier patients present more subtle transference cues, thus forcing therapists to base transference interpretations more on inference than concrete evidence. Glover (1955) has pointed out that in less healthy patients, early “spontaneous” transference enactments, such as fear of rejection, dependency, counterdependency, entitlement or devaluation/idealization, may take on a pathological form that is more suitable to transference interpretations.

It is possible that the long-term effect of transference interpretation on interpersonal functioning for low QOR patients would have been stronger if additional treatment during the follow-up period had been equal for both groups.

Although we have demonstrated that insight changes before outcome, many variables contribute to therapeutic change. Changes of both mediator and outcome can be causally linked to

treatment condition in randomized controlled trials, but the association between mediator and outcome cannot be experimentally controlled. In theory, the causal mechanism of change in this study could be some unknown, omitted variable, correlated with insight. This is an inevitable limitation, to date, in mediator studies.

Insight was measured with a single-item, global measure. This can be viewed as problematic in some respects. On the other hand, some of the most frequently used scales in clinical psychology are global scales rated by experts. The alpha level was liberal in this study, which may have increased the risk of Type I errors. Kraemer et al. (2002) suggested that moderators and mediators should not be defined based on p values, because then moderator and mediator status would change with sample size. Focusing on the magnitude of the effects may be more valid.

Treatments in this study were manualized and monitored, which may limit generalizability of the results to everyday clinical practice where treatments are more individually tailored. Our findings may seem to contradict earlier naturalistic studies that have reported negative correlations between transference interpretations and outcome (Høglend, 2004). However, also in this study we found a negative correlation between the level of transference interpretations and outcome within the low QOR transference group ($r = -.56, p = .003$). Within-group correlations may lead to erroneous conclusions about the effects of transference interpretations (Stiles & Shapiro, 1994). An experimental, dismantling design is the only method available, to date, for studying causal effects.

The sample size in this study was not large enough to provide precise estimates of effect sizes. Dynamic psychotherapy does not target specific psychiatric disorders. The wide variety of diagnoses in this study sample may in fact increase generalizability to patients seeking dynamic psychotherapy. On the other hand, the effects of transference interpretation within specific disorders, like depression, cannot be evaluated with precision.

Our results may have several clinical implications. Uncovering a specific theory-derived mediator (insight) that explains a substantial proportion of the long-term effects of a specific technique (transference interpretation) in psychotherapy may improve clinical theory and help develop more efficient treatments.

The conventional clinical wisdom in predicting psychotherapy outcome has been that patients with greater psychological resources and more mature relationships will benefit from transference interpretation (Gabbard, 2006; Sifneos, 1992). However, this study indicates that transference interpretation may be particularly useful when treating patients with personality disorder pathology and more severe and chronic difficulties in establishing stable and fulfilling relationships. These patients are subject not only to reduced psychological well-being. They use more health service resources, and they also have higher overall mortality, as shown in a large body of epidemiological studies, and in social neuroscience (Uchino, Holt-Lunstad, Uno, Campo, & Reblin, 2007).

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(Appendix follows)

Appendix

Insight Scale

This dimension covers cognitive and emotional understanding of the main dynamics of inner conflicts, the related interpersonal patterns and repetitive behaviors, and connection to past experiences. Ability to understand and describe own vulnerability, reactions to stress, and coping abilities

Range of ratings	Description
100–91	Unusual ability to describe genuinely personal wishes, fears, defenses, and the related behavior and connections to earlier (childhood) experiences. High awareness of own vulnerability, attitudes, and interpersonal patterns, secondary gains. Open and curious about and reflects on the multiple levels and meanings of experience. Realistic judgment of self and others.
90–81	Can account for inner conflicts, the related problems and repetitive behaviors, and connections to earlier experience. Aware of own vulnerability and reactions to stress. A tolerant and realistic sense of self and others in interpersonal disputes. May feel disillusionment but no bitterness or hopelessness.
80–71	Can account for most important inner conflicts, related problems and repetitive behavior patterns, and personal attitudes. Connections to earlier experience may partly be forgotten. Aware of own vulnerability, stress reactions, and coping abilities. May blame self or others too much in interpersonal disputes but reflects freely and observes own reactions and learns from it (integration). Generally curious and tolerant. Realistic expectations about the future.
70–61	Recognizes but can not clearly describe the complex association between past experience, inner conflicts, and present problems and repetitive patterns. Reasonably aware of own vulnerability and strength and reactions to stress. Tendency to blame self or others too much in disputes. Occasionally behavior and attitude may be unrecognized, but reflects and observes self in other areas.
60–51	Understanding of inner conflicts and associations to past and present experience and behavior is somewhat unclear, or less emotionally integrated, or “learned.” Inadequate judgment of self and others but ability to observe and reflect with time. Vulnerability and stress reactions sometimes a surprise. Some defensive, unrecognized attitudes and behaviors. Rigid views of rights and wrongs. May look for superficial solutions. Recognizes symptoms as sign of disturbance.
50–41	Superficial “learned” or misleading ideas of inner conflicts and past and present experience. Distortions of judgment of self versus others also when no disputes. Painful feelings accompanied by harsh self-blame or incorrectly ascribed to external factors. Little or no reflection on personal motives, unaware of important aspects of attitudes and behaviors (fundamentalism). May deny symptoms as sign of disturbance. Excessive pessimism or optimism.
40–31	Does not recognize associations between behavior and internal dynamic components. Severely distorted perceptions/judgment of self or others. Disavows painful personal reactions. Can describe internal experiences but in a stereotyped, confusing, or misleading way. Denies signs of mental disturbance.
30–21	Great difficulty describing internal experiences. Does not acknowledge associations between internal experiences and own behavior. Severe distortions/delusional ideas may be present.
20–11	Disorganized or fragmented mental functioning. Breakdown of reality testing. Need outside assistance.
10–1	Continuously disorganized in need of constant assistance for days.

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