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Goldilocks on the couch: Moderate levels of psychodynamic and process-experiential technique predict outcome in psychodynamic therapy

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Abstract
Objectives: Greater symptom change is often assumed to follow greater technique use, a "more is better" approach. We tested whether psychodynamic techniques, as well as common factors and techniques from other orientations, had a curvilinear relation to outcome (i.e., whether moderate or "just right" intervention levels predict better outcome than lower or higher levels). **Methods:** For 33 patients receiving supportive-expressive psychodynamic psychotherapy for depression, interventions were assessed at Week 4 using the multitheoretical list of therapeutic interventions and symptoms were rated with the Hamilton Rating Scale for Depression. **Results:** Moderate psychodynamic and experiential techniques predicted greater symptom change compared to lower or higher levels. **Conclusion:** This "Goldilocks effect" suggests a more complex relation of intervention use to outcome might exist.

Keywords: psychoanalytic/psychodynamic therapy; experiential/existential/humanistic psychotherapy; outcome research

Modern psychodynamic therapy incorporates multiple theories from its 120-year history to help patients change (Mitchell & Black, 1996; Summers & Barber, 2009). Even with this diversity of thought, most psychodynamic thinkers and practitioners agree on several core techniques that constitute the work of psychodynamic therapy (Blagys & Hilsenroth, 2000; Summers & Barber, 2009). Among them, supportive interventions reinforce adaptive responses (ego defenses) in the patient. These interventions include relationship building, suggestion or advice giving, and boundary setting. Expressive techniques explore and uncover (express) the unconscious conflict behind the patient's symptoms (Luborsky, 1984). These interventions include exploration of affect and interpersonal themes and making connections between different relationships in the patient's life (transference interpretations). Most often it is assumed that greater use of these techniques is likely to lead to improved patient outcome (cf., Stiles, 1996; Stiles, Honos-Webb, & Surko, 1998; Stiles & Shapiro, 1989, 1994) or a "more is better" approach (Barber, 2009; Stiles & Shapiro, 1989). For instance, quantitative investigations of the relation of techniques to outcome have almost exclusively relied on the use of linear correlation models (for reviews, see Stiles & Shapiro, 1989; Webb, DeRubeis, & Barber, 2010).

However, the empirical association of dynamic interventions to symptom change remains unclear (for reviews, see Barber, Muran, McCarthy, & Keefe, 2013; Høglend, 2004). By and large, investigations of global measures of psychodynamic interventions and symptom change have been equivocal (for no relation, see Barber, Crits-Christoph, & Luborsky, 1996; DeFife, Hilsenroth, & Gold, 2008; Ogrodniczuk & Piper, 1999; Ogrodniczuk, Piper, Joyce, & McCallum, 2000; for a favorable relation, see Ablon & Jones, 1998; Gaston, Thompson, Gallagher, Cournoyer, & Gagnon, 1998; Hendriksen

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et al., 2011; Hilsenroth, Ackerman, Blagys, Baity, & Mooney, 2003; Luborsky, McLellan, Woody, O'Brien, & Auerbach, 1985; for an unfavorable relation, see Barber et al., 2008). In the only meta-analysis to date on the subject, Webb et al. (2010) found no significant relation between adherence (i.e., the degree to which therapists deliver theory-specific interventions which are consistent with a therapy manual) and symptomatic improvement across 32 studies of psychotherapy outcome, regardless of the therapeutic modality under study (e.g., dynamic, interpersonal, cognitive-behavioral, and process-experiential).

While the disappointing link between technique use and outcome is not unique to psychodynamic therapy alone (Stiles, 1996; Wampold, 2001; Webb et al., 2010), it raises the question about how techniques might have their effect in therapy. Some researchers have productively explored the interaction of dynamic techniques and therapeutic alliance in predicting outcome (e.g., Barber et al., 2008; Gaston et al., 1998; Høglend et al., 2011; Owen & Hilsenroth, 2011). Others have examined how competent delivery of dynamic techniques relates to symptom change (e.g., Barber et al., 1996). Notably, Stiles and colleagues (1989, 1994, 1996, 1998) have cautioned against the expectation of a simple correlation between process and outcome factors and have suggested the responsiveness of the therapist to the patient's current needs is what might facilitate change. This hypothesis agrees with the experience of many dynamic practitioners. The psychodynamic clinical literature has long suggested that too many interpretative interventions may be disruptive to the patient's functioning (Strachey, 1934; Gill, 1982). Too many supportive interventions may overly gratify the patient and mask his or her symptoms without bringing longer term relief or might trigger an enactment of his or her conflict in the therapeutic relationship (Freud, 1919; Gill, 1951; Kohut & Wolf, 1978).

Accordingly, some researchers have hypothesized a curvilinear relation between psychodynamic interventions and outcome (Piper, Azim, Joyce, & McCallum, 1991; see also Barber et al., 2008; Høglend et al., 2006; Ogrodniczuk & Piper, 1999). Namely, moderate levels of dynamic interventions might be related to greater symptom improvement than might very high and very low levels (a "just right" hypothesis). The equivocal results of previous studies might have either represented a single leg of the curvilinear relation (either the positive or negative association of techniques to symptom improvement) or might have represented a linear model being forced on curvilinear data. Webb and colleagues (2010) observed individual effect sizes in their meta-analysis that varied from strongly negative to strongly positive, which lends partial support to a curvilinear hypothesis.

It is interesting and perhaps surprising that only a few studies have tested a curvilinear relation of dynamic interventions and symptom change. In the first empirical study of hypothesis, only partial support for a curvilinear relation between interpretation and outcome was found (Piper et al., 1991). Two later correlational studies did not produce evidence that moderate dynamic technique use was associated with better outcome than lower or higher levels of technique use (Barber et al., 2008; Ogrodniczuk & Piper, 1999). Indeed, the opposite effect was observed for a sample of patients in dynamic therapy for cocaine dependence (very high and very low level of dynamic interventions were related to *better* outcome than were moderate levels; Barber et al., 2008).[1] A unique experimental study tested whether patients with mixed diagnoses improved more when randomly assigned to psychodynamic treatment with a moderate level of transference interpretations (1–3 per session) or a low level of interpretations (Høglend et al., 2006). Patients receiving both low and moderate levels of interpretation improved significantly over time, but there was little difference in the amount that patients in each condition changed (although moderating effects of patient characteristics were later found, Høglend et al., 2011). The researchers chose not to include a high interpretation level condition in their design because their review of naturalistic studies of psychodynamic process and outcome suggested that such a condition was unlikely to be effective in terms of outcome and cost (Per Høglend, personal communication 02/15/10). A curvilinear relation may therefore still exist between psychodynamic techniques and outcome in patients with internalizing disorders.

Delivery of any psychotherapy is also likely to involve interventions from numerous schools of treatment. For example, it has been demonstrated that psychodynamic therapy contains modest levels of techniques from other therapy systems, like drug counseling (Barber et al., 2008), cognitive therapy (DeFife et al., 2008), and a number of different other theoretical orientations (McCarthy & Barber, 2009; Trijsburg et al., 2002). The effect of dynamic interventions on symptom improvement in other types of therapies has been reviewed elsewhere (see Shedler, 2010), but considerations of how techniques from other therapies might influence outcome in dynamic therapy have been less systematic. In a handful of studies, unintended techniques have had a modest to substantial contribution to outcome in dynamic psychotherapy (Ablon & Jones, 1998; Barber et al., 2008; DeFife et al., 2008; Luborsky

et al., 1985; but see also Hilsenroth et al., 2003). However, in each of these studies interventions from only a few psychotherapy systems have been examined (e.g., Luborsky et al., 1985), which underrepresents the variety of interventions from different systems that dynamic therapists might possibly use. A curvilinear relation of unintended techniques to outcome might also exist as we hypothesize for dynamic therapy techniques. Very high levels of interventions from any system might represent technical rigidity or inflexibility to the patient's needs on the part of the therapist (Miller & Binder, 2002), whereas very low levels of interventions from any system may not be sufficient to motivate change in the patient.

The present study tests the curvilinear relation of a wide range of interventions from a number of theoretical orientations to subsequent outcome in psychodynamic therapy for depression. More specifically, we hypothesize that moderate levels of psychodynamic interventions (e.g., exploration and interpretation) will predict more symptom improvement than will higher or lower levels of dynamic interventions. We also hypothesize that supportive interventions (e.g., common factors like providing hope and fostering therapeutic alliance) will be associated with outcome, although we have no strong predictions for whether this relation will be a linear or curvilinear function. We will also explore the contribution of interventions not intended to be found in dynamic therapy (i.e., behavioral, cognitive, dialectical-behavioral, interpersonal, person-centered, and process-experiential) to outcome. We do not have specific directional hypotheses for the potential relations of interventions from these systems to outcome, but will explore for their linear and curvilinear relation to outcome for interventions from these different systems separately.

Methods

Participants

Patients. Participants were 33 patients completing treatment in the psychotherapy arm of a randomized controlled trial (RCT) comparing psychodynamic therapy versus pharmacotherapy versus pill placebo. To be included in the study participants were required to have a primary diagnosis of major depressive disorder based on their responses to the structured clinical interview for *DSM-IV* (Axis I) administered by a trained diagnostician. They could not have lifetime history of bipolar or psychotic disorder nor a substance abuse or dependence disorder in the previous 6 months.

Fifty-one patients were initially randomized to psychodynamic therapy. However, nine dropped out of treatment before the first process measurement point, five of whom never attended their first therapy appointment. Of these nine patients, one described practical reasons for dropping out of treatment (e.g., childcare and transportation), two stated that the time commitment was too great, three wanted a treatment other than dynamic therapy, and three did not say why they exited the study or could not be reached. Eight of the nine patients leaving treatment before Week 8 were of minority status (i.e., African-American or Latino). An additional nine patients discontinued treatment after Week 4 or declined to participate in a termination interview. One moved away from the area, one dropped out for practical reasons, two felt improved and did not want further treatment, three felt they were not improving fast enough, one was dissatisfied with her treatment, and one did not say. Five of these nine patients leaving treatment before termination were of minority status. The subsample of 33 completers did not differ significantly from the larger sample on demographic characteristics, process measures, or outcome measures.

Sixty-one percent of patients were female (n = 20). Mean age was 35.5 years (SD = 12.0, range = 19–58). Six percent identified their primary race or ethnicity as Asian (n = 2), 49% as African-American (n = 16), 3% as Latino/a (n = 1), and 42% as Caucasian (n = 14). The majority of clients were single (n = 21, 64%), with fewer clients separated/divorced (n = 2, 6%) or married or cohabiting (n = 9, 27%), and 1 (3%) widowed. Average number of years of education completed was 14.3 (SD = 2.2, range = 10–19). Fifty-five percent worked either full- (n = 14) or part-time (n = 4), 36% (n = 12) were unemployed/disabled, and 9% (n = 3) were students.

Therapists. Therapy was provided by four Ph.D.-level psychologists (three were female) with an average of more than 15 years of psychotherapy experience at the beginning of the trial. All therapists were between the ages of 40 and 50. All had received training in psychodynamic therapy prior to participation in this study and had achieved acceptable levels of adherence and competence using the Penn Adherence-Competence Scale (Barber & Critis-Christoph, 1996). The median number of clients that each therapist treated in this sample was eight.

Treatment

The psychodynamic therapy conducted in this study followed a supportive-expressive (SE) treatment model (Luborsky, 1984) with specific adaptations

for depression (Luborsky et al., 1995). In SE therapy, clients are assumed to have interpersonal and intrapersonal conflicts that give rise to their depressive symptoms. SE therapists formulate a unique core conflictual relationship theme (CCRT; Luborsky & Crits-Christoph, 1998) for each patient that summarizes the patient's wishes and expected responses from self and others to these wishes that cause the patient distress. Expressive techniques (exploration, clarification, and interpretation) are used to help the patient gain in self-understanding about the CCRT (insight). Supportive techniques create an environment in which the patient can safely uncover his or her core conflict and test out new ways of coping with feelings, expressing needs, and responding to others. SE manuals outline general principles of technique use for therapists to follow (as opposed to session-by-session prescriptions), so SE therapists are given flexibility in when and how they choose to intervene.

Measures

Multitheoretical list of therapeutic interventions. The multitheoretical list of therapeutic interventions (MULTI; McCarthy & Barber, 2009) is a 60-item measure of key interventions from a wide range of therapy orientations (behavioral, cognitive, dialectical-behavioral, interpersonal, person-centered, psychodynamic, and process-experiential therapies, plus the common factors interventions). Items are rated on a 1 (*not at all*) to 5 (*very*) scale of how typical each intervention was of the session. Subscales representing each of the eight therapy orientations included in the MULTI are created by averaging items theoretically belonging to those orientations. The MULTI can capture the perceptions of clients, therapists, and observers of the interventions in the same session. In this study, five judges (one Ph.D., one M.D., and three advanced graduate students) rated an audiotaped session in the fourth week of treatment for each patient. Week 4 was the target for these ratings, but when this session was not available (e.g., due to irregularities in scheduling, equipment malfunction, researcher error, or poor recording quality), the nearest session with a viable recording was sampled. For 67% of the 33 patients, a session from Week 4 was available; for 18% of patients, a session from Week 3 was sampled; for 15% of patients, a session from Week 5. The average number of days from the beginning of treatment to the process measurement in this sample was 28 (range = 18–35 days).

The five raters each initially received 15 hr of training on the MULTI and periodically met to rate and discuss audiotaped sessions in order to prevent rater drift. Raters were allowed to begin rating tapes individually when preliminary reliability analyses including their ratings achieved at least a modest level of reliability for each of the MULTI subscales ($\rho_I > .50$). A random pair of judges was selected to rate each tape, and their ratings were averaged together to create the scores for the session. Interrater reliability was computed as an intraclass correlation (ICC [2,2]; Shrout & Fleiss, 1979) representing the reproducibility of the average of any two randomly selected judges' ratings on a MULTI subscale for any randomly selected tape. The first column of Table I presents the ICCs for each MULTI subscale. Most subscales exhibited moderate ($\rho_I > .70$; Shrout, 1995) interrater reliability, with the exception of the dialectical-behavioral therapy (DBT) subscale ($\rho_I = .54$, not displayed).

Internal consistency estimates of the MULTI subscales (see the second column of Table I) were moderate ($\alpha > .70$; Shrout, 1995), again with the exception of the DBT subscale ($\alpha = .31$, not displayed). The DBT subscale was excluded from further analyses because it evidenced poor interrater and internal reliability in this sample.

Hamilton Rating Scale for Depression. The Hamilton Rating Scale for Depression (HRSD; Hamilton, 1960) is a commonly used observer-rated measure of depression severity. Diagnosticians were the same as those who administered the intake interview described in the Participants section. Data reported in this study were from the 17-item version of the HRSD and were collected before randomization, in the fourth week of treatment, and at termination. The reliability and validity of the HRSD are well documented (Rabkin & Klein, 1987). Interjudge reliability in this sample was

Table I. Descriptive statistics and relations to prior symptom change for MULTI subscales ($n = 33$).

MULTI subscale	ρ_I	α	*M*	*SD*	Range	r_{prior}[a]
Psychodynamic	.83	.84	2.70	0.62	1.63–3.71	−.09
Common factors	.66	.82	3.74	0.45	2.93–4.50	−.18*
Behavioral	.82	.81	1.89	0.41	1.27–3.00	.03
Cognitive	.70	.72	2.02	0.31	1.50–2.66	−.05
Interpersonal	.82	.79	2.61	0.69	1.14–3.79	−.15†
Person-centered	.70	.69	3.21	0.49	2.36–4.21	−.17†
Process-experiential	.73	.75	2.44	0.48	1.50–3.28	−.09

MULTI = Multitheoretical list of therapeutic interventions; HRSD = Hamilton rating scale for depression. Values in the first column represent intraclass correlation coefficients (model [2,2]; Shrout & Fleiss, 1979).
[a]Correlations ($df = 32$) of prior HRSD change (residuals of intake HRSD scores regressed on Week 4 HRSD scores) and process measure scores.
†$p < .10$; *$p < .05$.

excellent (ICC [2, 1], ρ_I = .92). Symptom change from intake up until the fourth week of therapy was estimated as the residuals in a regression of intake HRSD scores regressed on Week 4 HRSD scores.

Procedure

A more extensive overview of study procedures is provided by Barber, Barrett, Gallop, Rynn, and Rickels (2012). Clients contacted study personnel after viewing advertisements posted in the community or being referred by a health-care provider familiar with the study. Those likely to meet study entrance criteria attended a two-part intake interview. HRSD scores from the second intake interview (or the last interview if more than two interviews were necessary to complete all intake procedures) were used as the baseline scores in the present study.

Clients were then randomly assigned to condition (psychotherapy, antidepressant medication, or placebo). Patients in the psychotherapy condition were seen for 45-minute sessions twice weekly during the first month of treatment and then once weekly for the next three months of treatment. Patients could receive up to a total of 20 sessions of psychotherapy. In our subsample, patients utilized on average 17 sessions (*SD* = 2.80). Assessment interviews with a diagnostician blind to the clients' condition were conducted at regular intervals; those relevant to the present study were conducted at Week 4 and at the termination of treatment. Week 4 was chosen to correspond to an assessment point when the HRSD was scheduled to be given. Week 4 is often considered by psychotherapy researchers to be within a sensitive period in which process most affects outcome in therapy (Flückiger, Grosse Holtforth, Znoj, Caspar, & Wampold, 2013). In addition, a process observation at Week 4 allowed sufficient time for the patient and therapist to develop a relationship and permitted the therapist to formulate the patient's CCRT and make the key dynamic interventions.

Results

Therapy Process Description

Table I presents the mean MULTI subscale scores for Week 4. Technique use in general was relatively low (the average intervention item, or the therapist "activity level" in the session, was rated between "slightly" and "somewhat" representative on the MULTI [*M* = 2.52, *SD* = 0.31]). Psychodynamic techniques were presented above the average intervention levels, but common factors and person-centered intervention levels were consistently rated the highest among the different orientations. Cognitive and behavioral interventions were among the least represented in supportive-expressive therapy. These intervention levels were similar to the MULTI subscale levels reported for observers of psychodynamic sessions in the initial validation of the measure (McCarthy & Barber, 2009). There were no significant differences among therapists in any of the MULTI subscale scores (all *p*s > .32). Therapist use of interventions was not related to the number of sessions eventually utilized by patients in this sample (all *p*s > .25).

Correlation of Process and Outcome

Symptom change over treatment. The mean HRSD score at intake was 19.24 (*SD* = 3.87). By Week 4, the mean HRSD had declined to 16.70 (*SD* = 5.65). At termination, the mean HRSD score was 13.21 (*SD* = 8.09). Across treatment, clients exhibited a decline in depressive symptoms (r [32] = −.30, $p < .0002$). We calculated the percent of patients achieving a clinically significant reduction in symptoms at the end of treatment (i.e., those patients whose symptoms at termination are within a normal range of functioning, or a score below an 11.28 on the HRSD (Grundy, 1996)). Forty-two percent (n = 14) of this sample evidenced clinically significant improvement. Symptom change prior to Week 4 was small but significant (r [32] = −.20, $p < .02$) and was associated with greater common factors, interpersonal, and person-centered intervention use (see the last column of Table I). Symptom change prior to Week 4 (residuals of intake HRSD regressed on Week 4 HRSD) also predicted termination HRSD scores (r [32] = −.70, $p < .0001$). Prior change in symptoms explained 48% (model R^2) of the variance in termination HRSD scores. Symptom change subsequent to Week 4 was small but significant (r [32] = −.29, $p < .0005$).There were no significant differences among therapists in termination HRSD (p = .41). The number of sessions utilized by patients was not correlated with termination HRSD (p = .26).

Linear relations of process and outcome. For all analyses investigating the influence of interventions from each orientation on symptom change, we used the following strategy. We first used the scores for each MULTI subscale at Week 4 to predict HRSD scores at termination in a separate regression, for a total of seven regression analyses. MULTI scores were measured during treatment and were likely to be in some way influenced by symptom change occurring prior to their measurement. To account for symptom change prior to Week 4, we covaried prior symptom change (residuals of intake

HRSD regressed on Week 4 HRSD) in the regression model. Semi-partial *r*s are reported in the first column of Table II. These values represent the linear relation of the MULTI subscale to subsequent symptom change, controlling for prior symptom change. Negative values indicated that greater symptom improvement was associated with greater levels of interventions. None of these relations were significant. The second column of Table II presents the percent of variance in termination HRSD explained when adding a linear term to a model with prior symptom change as a predictor. For each MULTI subscale, less than 1% of additional variance was explained when interventions from any therapy system were included.

Curvilinear relations of process and outcome. To test the curvilinear relation of interventions from each orientation to subsequent outcome (i.e., whether moderate MULTI subscale scores were related to greater subsequent outcome than were higher or lower levels), we repeated the regression analyses above and included a quadratic term for each of the MULTI subscales. We report the semi-partial *r*s for these analyses in the second-to-last column of Table II. Positive coefficients indicate that more moderate levels of the process factor are related to better subsequent outcome compared to higher or lower levels (U-shape function); negative coefficients indicate that higher or lower levels of the process factor are related to better subsequent outcome compared to more moderate levels (inverted U-shape function). The final column of Table II displays the percent of termination HRSD variance explained when adding a curvilinear term to a model with prior symptom change as a predictor.

Table II. Linear and curvilinear relations of MULTI subscales to subsequent outcome (n = 33).

			Curvilinear[b]		
MULTI subscale	Linear[a]	R^2	Linear	Quadratic	R^2
Psychodynamic	−.02	.48	−.37	.37*	.55
Common factors	.20	.50	.06	−.05	.51
Behavioral	.12	.49	.17	−.16	.50
Cognitive	.11	.49	−.01	.01	.49
Interpersonal	−.05	.49	−.11	.10	.49
Person-centered	.11	.49	−.17	.18	.51
Process-experiential	−.03	.48	−.45	.45**	.59

MULTI = Multitheoretical list of therapeutic interventions; HRSD = Hamilton Rating Scale for Depression.
[a]Semi-partial correlations (df = 30) of termination HRSD scores and MULTI subscale scores, controlling for prior HRSD change (residuals of intake HRSD scores regressed on Week 4 HRSD scores).
[b]Semi-partial correlations (df = 29) of termination HRSD scores and either linear or quadratic MULTI subscale scores, controlling for prior HRSD change (residuals of intake HRSD scores regressed on Week 4 HRSD scores) and the linear or quadratic term for that MULTI subscale score.
*p < .05; **p< .01.

As predicted, moderate levels of psychodynamic interventions were related to better subsequent symptom improvement compared to higher or lower levels (see Figure 1). There was a 7% increase in the variance in termination HRSD scores explained when a curvilinear term for dynamic interventions was added. To help interpret the meaning of this relation, we divided patients into three groups based on their psychodynamic subscale scores relative to the sample mean (high [n = 8], 1 *SD* above the sample subscale mean; low [n = 8], 1 *SD* below the mean; moderate [n = 17], within 1 *SD* of the mean). We then examined the rates of individuals in each group evidencing clinically significant change. Fifty-nine percent of patients receiving a moderate amount of psychodynamic interventions obtained a clinically significant change, whereas those patients receiving high or low levels of dynamic interventions shared only a 25% chance of achieving clinically significant change.

Additionally, moderate levels of process-experiential interventions, but not higher or lower levels, were also related to greater subsequent symptom change (see Figure 2). There was a 10% increase in the variance in termination HRSD scores explained when a curvilinear term for experiential interventions was added. As before, to assist in interpreting the meaning of this association, we divided patients into three groups based on their process-experiential subscale scores relative to the sample mean (high [n = 5], 1 *SD* above the sample subscale mean; low [n = 7], 1 *SD* below the mean; moderate [n = 21], within 1 *SD* of the mean) and calculated the clinically significant change for each patient. A slight majority (52%) of patients receiving a moderate amount of experiential interventions experienced

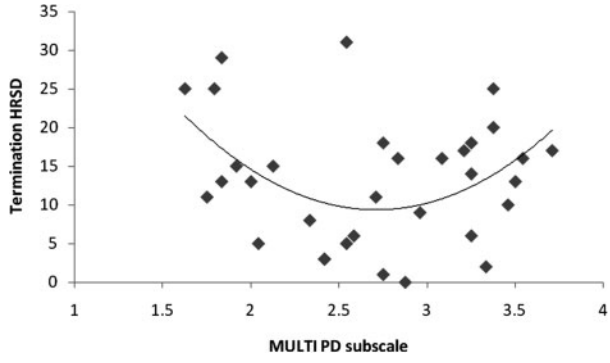

Figure 1. Curvilinear relation of Week 4 psychodynamic therapy (PD) subscale scores to termination HRSD scores. Plotted values are HRSD scores for each client at termination (n = 33). The regression line represents the curvilinear relation between PD subscale scores and subsequent outcome.

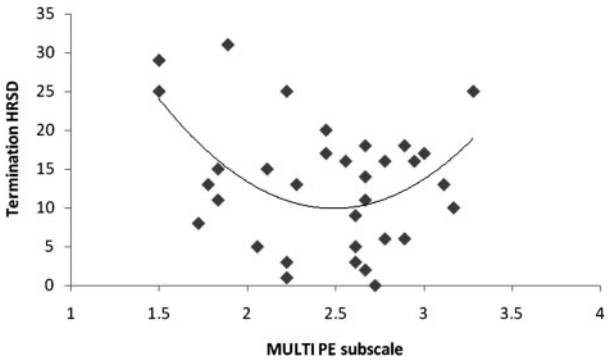

Figure 2. Curvilinear relation of Week 4 process-experiential therapy (PE) subscale scores to termination HRSD scores. Plotted values are HRSD scores for each client at termination (n = 33). The regression line represents the curvilinear relation between PE subscale scores and subsequent outcome.

clinically significant change, whereas those patients receiving low or high levels of experiential interventions had either a 29% or 20% chance, respectively.

Exploratory analyses of what moderate intervention use represents. To provide a better description of what moderate level of interventions might mean, we conducted two sets of exploratory analyses on the individual dynamic and experiential items. First, we examined whether sessions with moderate MULTI dynamic or experiential subscale scores had a different profile of individual dynamic or experiential interventions compared to sessions with high or low scores for those same MULTI subscales. For example, sessions with moderate MULTI psychodynamic subscale scores might have very high levels of free association and exploration of past relationships but low levels of interpretation, whereas sessions with very high MUTLI dynamic subscale scores might have very high levels of interpretation and exploration of past relationships but little free association and sessions with very low levels of MULTI dynamic subscale scores might have low levels of all interventions. We grouped sessions into these high (above 1 *SD* of the sample mean), moderate (within 1 *SD*), and low technique (below 1 *SD*) use groups separately for the psychodynamic subscale mean and then for the experiential subscale mean as described above. Next we performed two repeated-measures ANOVAs on these groups of sessions comparing the scores on the individual MULTI items making up the subscale by which they were grouped (dynamic or experiential). A significant interaction term of group by item would suggest that either dynamic or experiential interventions were used differently based on whether session level of dynamic or experiential technique use was high, moderate, or low. Neither of the interaction terms for these ANOVAs were significant (ps > .11),[2] suggesting that the profile of individual dynamic or experiential interventions did not change regardless of the overall level of dynamic or experiential intervention use.

Next, we examined whether individual dynamic and experiential techniques had linear or curvilinear relations to outcome. For those individual items achieving at least moderate interrater reliability (α > .70; Shrout, 1995), we used the individual dynamic and experiential item scores (and their quadratic transforms) to predict termination HRSD scores, controlling for prior symptom change. No linear relations were significant for any intervention. However, among dynamic techniques, moderate levels exploration of symptom function (semi-partial r [29] = .45, p < .01), transference interpretation (semi-partial r [29] = .36, p < .05), and discussion of the development of relationship patterns (semi-partial r [29] = .42, p < .02) were each related to better outcome than were high or low levels. Exploration of avoided affect, shared by dynamic and experiential therapies, also showed a curvilinear relation to outcome (semi-partial r [29] = .52, p < .003).

Discussion

In the fairy tale, Goldilocks sampled many different things available to her but could not make use of them unless they were "just right." We observed what could be termed a "Goldilocks effect" in studying curvilinear relations of techniques to symptom change in supportive-expressive psychotherapy for depression. Namely, moderate levels of psychodynamic and process-experiential interventions were predictive of better subsequent symptom change than were very low or very high levels of these interventions (cf., Piper et al., 1991). Due to the small size of the present sample and the multiple tests involved in examining interventions from many different theoretical orientations, interpretation of these findings must proceed with some degree of caution.

Experiential techniques might relate to outcome in dynamic therapy due to the emphasis on deepening affect and experience present in modern dynamic thinking (Blagys & Hilsenroth, 2000; Diener, Hilsenroth, & Weinberger, 2007; Spotnitz, 1997; Summers & Barber, 2009; Wachtel, 1997). Moderate use of psychodynamic and experiential interventions may represent the "just right" level at which the patient can begin to make use the interventions to change his or her symptoms, presumably by increasing insight (Messer & McWilliams, 2007) or by facilitating the experience of emotion (Greenberg & Pascual-Leone, 2006). Too little dynamic or experiential interventions may not be sufficient to trigger

these processes (e.g., not connecting past and present experiences enough for the patient to gain awareness of his or her conflicts; not encouraging the experience and processing of emotion enough). On the other hand, too much dynamic or experiential intervention use may lead to poorer outcomes than more moderate intervention use by overwhelming the patient or his or her psychological defenses, by flooding the patient too quickly with intolerable emotion, by causing resistance to treatment, or by being too inflexible to the clinical presentation of the patient.

This curvilinear effect was observed in a study using correlational methods. Therefore, the relation between psychodynamic technique use and outcome also may be interpreted in the opposite direction. Patients who are likely to improve may also have qualities that draw the therapist to intervene at a moderate level (e.g., desire to please or be compliant, making it easier for the therapist to provide a moderate level of interventions). A moderate intervention level in this case may seem "just right" even though it may in fact be something about the patient that causes good outcome. Patients who are unlikely to improve may exhibit interpersonal or symptom characteristics that make the therapist intervene much less or much more than he or she might for other patients. For example, interpersonally difficult patients might act out or withhold during the therapy, preventing the therapist from intervening as he or she normally would or causing the therapist to intervene at a greater level in an effort to manage the interpersonal symptoms. Alternatively, patients unlikely to improve may exhibit telltale signs that may dishearten experienced therapists (e.g., hopelessness, chronic or pervasive symptoms, and poor functioning). When faced with these patients, therapists may give in to these clinical signs and fail to intervene or may work very vigorously but without success to combat them (Greenson, 1967). Keeping with our analogy, the story may also be told that Goldilocks was not satisfied until she got what she considered was "just right."

In this study, we also explored what moderate dynamic and experiential technique use might mean. In this sample, therapists who use a moderate amount of techniques did not appear to intervene with a different therapeutic strategy (i.e., preferential use of certain interventions and not others) compared to therapists using higher or lower levels of technique. Those individual dynamic or experiential items that showed a significant association with outcome each shared a curvilinear, but not a linear, relation to symptom change. Together, these findings imply that moderate technique use in this sample might describe the application of all dynamic and experiential interventions in a measured amount. These limited exploratory analyses do not rule out the possibility of moderate technique use representing therapist competency, optimal responsiveness to the patient's needs in the moment, or specific patient characteristics that might elicit a moderate level of therapist intervention. Further intensive process research will perhaps provide a more thorough understanding of this question (cf., Stiles et al., 1998).

Unfortunately, due to our small sample size, it was inadvisable to examine the curvilinear relations of psychodynamic and process-experiential interventions simultaneously. This analysis may have shown us whether the delivery of moderate levels of both dynamic and experiential interventions is related to outcome or whether there is an interesting interaction in how the levels of these techniques predict outcome. Replication in a larger sample or more fine-grained process analytic studies will be needed to answer this important question.

Common factors (supportive interventions and therapeutic alliance) were not predictive of outcome in this sample, either in a curvilinear or linear fashion. This finding is surprising given the high place given to common factors in psychodynamic therapy (Greenson, 1967; Luborsky, 1984) and given our observations that common factors interventions were the highest among the types of interventions measured by the MULTI. Controlling for the effect of prior symptom change might be one reason why we did not find a relation of common factors to outcome. As patients improved more, the amount of common factors interventions their therapists used increased. Other investigations have found the power of the common factors to predict outcome is reduced when early symptom change is controlled (Barber, 2009; Barber et al., 2014; but see also Crits-Christoph, Connolly Gibbons, & Mukherjee, 2013). Perhaps common factors are a necessary platform for psychodynamic and process-experiential interventions to have their effect, although they themselves may not have been sufficient for change in this sample. A restriction in range in the common factors may also be a possible reason why no relation to outcome was observed.

Multiple limitations should be noted. First, the sample was relatively small. In order to investigate techniques from many different orientations and to control for prior symptom change we used multiple tests with multiple predictors, which increase the likelihood of chance results. Therefore, our findings must then be viewed as only preliminary and any conclusions must be only cautiously stated as we await further replication in samples with greater size. Patient attrition and study methodology demands

were the main reason for reduced sample size. To test our hypotheses, we needed a process measurement and three symptom measurements over 16 weeks' time, which represented a significant investment for patients. A second limitation then is that the relations observed in this study may only apply to patients who are able to complete a full treatment protocol following all procedures. This sample was also atypical for psychotherapy research studies in that it had a high level of racial and socioeconomic diversity represented. Retaining minority and low-income individuals represented a significant challenge and accomplishment in this study due to the higher number of stressors that these individuals experience on average. Working successfully with diverse populations in psychodynamic therapy may also require a manner of intervention different than would be found in other process studies of therapy, and curvilinear relations may fit this sample well but may not be observed in other samples in the literature.

Third, therapist effects could not be modeled due to our small number of patients and therapists. Although we observed no differences among therapists in their levels of MULTI subscales and in their patients' symptom outcome, therapists' characteristic styles may be important to the question of how technique relates to outcome. Fourth, intervention measurement was at Week 4, as our goal was to match our process observation with the timing of symptom assessment. While within the sensitive period standardly thought to be important for process-outcome measurement (Flückiger et al., 2013), this measurement point may be later in therapy than other process studies (e.g., Barber et al., 1996), perhaps leading to differences in therapy process or problems generalizing to other work. Lastly, whereas the MULTI assesses potential interventions from a wide range of theoretical orientations, these interventions may not have occurred in our present sample due to its small size and the restrictions placed on therapists in an RCT. More work with a larger sample of treatments in needed to understand better how diverse interventions may relate to outcome in dynamic and other therapies.

In conclusion, moderate levels of psychodynamic and process-experiential techniques were related in this sample to better outcome in dynamic therapy than were very high or very low levels, a "Goldilocks" effect. In part due to small sample size, it cannot be told from this study whether moderation in the use of these techniques was a mechanism leading to good outcome or an indicator of a therapy that is likely to be successful. Replication in a larger sample and more fine-grained process research are still necessary. Nevertheless, curvilinear or "just right" relations might be one productive way to examine the otherwise conflicting "more is better" association of technique use and outcome (e.g., Webb et al., 2010). As with other work (Hilsenroth et al., 2003), this investigation may question the study of intervention use solely from a single theoretical orientation. In this study, unintended techniques (i.e., process-experiential) also predicted therapy success.

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Notes

[1] Dynamic psychotherapy for substance use may operate differently than for other psychiatric disorders due to the externalizing and antisocial personality styles commonly found in substance users. These traits run contrary to the rationale of dynamic psychotherapy that internal conflict creates problems and so may require different strategies (perhaps either very forceful or very ginger intervention use) compared to psychodynamic work with more internalizing patients.

[2] The process-experiential item representing role-playing was excluded from these analyses due the fact it was only found to occur in one session in this sample.

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