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Therapy Processes, Progress, and Outcomes for Two Therapies for Gynecological Cancer Patients

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Abstract

Objective—Although a number of effective psychotherapies have been identified for cancer patients, little is known about therapy processes as they unfold the course of treatment and the role of therapy processes in treatment outcome. We used growth curve modeling to evaluate the associations between therapy processes and outcomes among gynecological cancer patients participating in two types of therapy.

Methods—Two hundred twenty five women newly diagnosed with gynecological cancer were randomly assigned to receive eight sessions of a coping and communication intervention (CCI) or a client-centered supportive therapy (SC). Participants completed measures of pre-intervention and post-intervention depression, working alliance after Session 2, and post-session progress and depressive symptoms after each session. Therapists completed measures of perceived patient progress.

Results—Both patients and therapists reported a steady increase in session progress and patients reported a steady decrease in depressive symptoms over the course of both the CCI and SC sessions. Perceived progress in one session predicted progress in the subsequent session. Early working alliance predicted improved session progress and reductions in post-session depressive symptoms over sessions. Working alliance did not predict pre-post treatment changes in depression. Patient-rated session progress predicted greater reductions in pre-to post-treatment depression, but therapist-rated progress did not.

Conclusions—For two types of treatment delivered to women diagnosed with gynecological cancer, patient-rated session progress and depressive symptoms rated over therapy sessions may serve as a yardstick that can be useful to therapists to gauge patient's response to treatment.

Keywords

Generic Model of Psychotherapy; therapeutic process; working alliance; session progress; cognitive therapy; supportive therapy; cancer

Although a number of psychological interventions for individuals diagnosed with cancer have shown efficacy, reasons why these treatments are effective have not been studied extensively. Identifying the therapeutic ingredients responsible for change may improve treatment efficacy and efficiency if these analyses elucidate effective ingredients to enhance these processes (Kazdin, 2006). With an increasing emphasis on evidence-based practice and patient-reported outcomes in health care (Dozois et al., 2014), there is a movement in health care towards monitoring client response and progress during treatment (e.g., Ionita & Fitzpatrick, 2014). Thus, an understanding of therapy processes will advance what is known about the efficacy of psychological interventions for cancer patients.

Non-specific therapy processes, defined as treatment ingredients that contribute to outcomes across therapeutic approaches, are known to play an important role in the efficacy of psychological interventions. There are only a few studies that have assessed the role of non-specific factors such as working alliance (e.g., Applebaum et al., 2012; Manne et al., 2010) and therapeutic realizations in therapy outcomes for cancer patients (Manne et al. 2010). However, non-specific processes have received attention in the general psychotherapy literature (e.g., Burlingame McClendon, & Alonso, 2011; Lorenzo-Lucas et al., 2014). The Generic Model of Psychotherapy (GMP) provides a conceptual framework for studying these processes (Kolden, 1996; Orlinsky, 1994; Orlinsky & Howard, 1986). The GMP proposes six therapeutic change processes: therapy contract, therapeutic interventions, working alliance, therapeutic realizations, in-session impacts, and the sequential flow of the processes over the course of therapy. For the present study, we focus on two of these therapy processes—working alliance and the sequential flow of processes over the course of therapy. Working alliance is comprised of the quality of the emotional bond between patient and therapist, degree of collaboration in setting therapeutic goals, and level of agreement about the ways of achieving these goals (Horvath & Symonds, 1991; Orlinsky, Grawe, & Parks, 1994). Meta-analyses have shown that alliance is consistently associated with better therapy outcomes (e.g., Martin, Garske, Davis, 2000). Sequential flow has been defined as the growth and change in both therapy processes and short-term outcomes (changes in distress in therapy) over the course of therapy that lead to post-treatment outcomes (Orlinsky, Grawe, & Parks, 1994).

A unique element of the GMP is that short-term therapy outcomes are considered a key element of therapy process, in that they are conceptualized as an indicator of the sequential flow of the client's experience over the course of therapy (Orlinsky & Howard, 1986). Short-term therapy outcomes are defined as the patient's and/or therapist's evaluation of the impact of a session both in terms of progress made in sessions and the patient's emotional

response to the session, which is typically evaluated as the client's post-session mood (Orlinsky & Howard, 1986). Short-term therapy outcomes have not received empirical attention in the psycho-oncology literature or in the general therapy literature, but they are important because they are associated with meaningful events such as the development of a strong working alliance (Mallinckrodt, 1993) and post-treatment reductions in distress (Watson, Schein, & McMullen, 2010). Most importantly, low levels of session progress predict premature therapy termination (Stiles, 1980; Watson & Greenberg, 1996).

A second element of the GMP is that this model postulates mediational associations between therapy processes and post-treatment outcomes (Orlinsky, Grawe, & Parks, 1994). This approach enriches our understanding of how therapy processes may work together to contribute to the success of therapy. In addition to the well-known direct impact of working alliance on post-treatment outcomes (Barber, Connolly, Crits-Cristoph et al., 2000?) and the direct association between session progress and session outcome (Beckner, Vella, Howard, & Mohr, 2007; Constantino, Castonguay, & Schut, 2002), the GMP proposes mediational roles for short-term session outcomes. Early working alliance predicts better treatment outcomes in part because it promotes the necessary improvements in progress and symptoms that accrue incrementally over sessions (Orlinsky, 1994; Orlinsky & Howard, 1986).

These results suggest that evaluating the patterns of change in and associations between therapy processes (e.g., working alliance), short-term outcomes (e.g., session progress, post-session depressive symptoms), and post-treatment outcomes may yield important information about how successful therapy works, particularly for psychological interventions for cancer patients. The primary goal of this study was to examine therapy processes, short-term outcomes, and post-treatment outcomes for patients recently diagnosed with gynecological cancer who received either brief supportive, client-centered counseling (SC) or a structured, prescriptive coping and communication skills intervention (CCI). Women undergoing treatment of gynecological cancers face numerous psychological and physical challenges. With the exception of early stage cervical cancer, these cancers typically carry a poor prognosis (American Cancer Society, 2015). The disease course is typically characterized by recurrences and multiple courses of treatment which leads to pain and the deterioration in daily functioning. The radical abdominal surgery that many patients undergo disrupts body image, reduces sexual functioning, and induces menopause (if pre-menopausal). Given the difficult disease course and poor prognosis, it is not surprising that rates of distress are elevated (Norton et al., 2004; Myers et al., 2013).

In a prior clinical trial, the efficacy of a client-centered supportive counseling (SC) and a structured, skill-based coping and communication skills intervention (CCI) in reducing depressive symptoms were illustrated (Manne et al., 2007). In a subsequent trial, the original interventions were enhanced by adding one session to both interventions, increasing CCI's focus on coping with disease progression, adding more skill practice to CCI, and fostering more emotional expression and therapy theme development in SC. We tested these enhanced interventions in a large randomized clinical trial which forms the basis of the present study (Manne, unpublished data). These two treatments were selected because one was much more structured and focused on teaching coping skills (CCI), and the second was much less

structured, client-centered, and focused on expressing and understanding emotional reactions to cancer.

This study had three aims. The first aim was to examine changes in progress over the course of the in-person sessions from both the patient and therapist perspectives (e.g., sequential flow), as well as changes in depressive symptoms. We predicted that therapy progress would increase and depressive symptoms would decline over the sessions. We also predicted that perceived progress in one session would predict perceived progress in the next session. That is, progress would build over time.

The second aim was to examine the association between early working alliance and short-term therapy outcomes. There were two hypotheses. First, we proposed that higher early working alliance would predict more progress and lower depressive symptoms over the sessions. The second hypothesis regarded a moderating role for working alliance in predicting the change in session progress over time. Specifically, we proposed that patients with higher levels of early working alliance would show a greater increase in progress and a steeper decline in depressive symptoms over sessions.

The third aim was to examine the interplay between working alliance, patient and therapist-rated session progress, and post-treatment outcomes (Gelso, Wine, Kivlighan, et al., 1997; Kivlighan Mamarosh & Hilsenroth, 2014). Consistent with GMP, we proposed that session progress would mediate the associations between working alliance and pre to post-therapy changes in depressive symptoms. That is, higher working alliance would predict greater increases in session progress, which would, in turn, predict greater reductions in depressive symptoms after treatment was complete. For each aim, we examined whether there were differences between the two treatment approaches. However, consistent with GMP and with our prior research suggesting equal effects for SC and CCI (Manne et al., 2007), we did not predict differences between the two types of therapy.

Methods

Participants and Procedures

This is an analysis of data collected as part of a randomized clinical trial evaluating the efficacy of a Coping and Communication-Enhancing Intervention (CCI) versus a Supportive Counseling Intervention (SC) and Usual Care (UC) (Manne et al., unpublished data). Participants were recruited from seven hospitals in the northeastern US. Study inclusion criteria were: diagnosed with primary gynecological cancer (ovarian, endometrial, cervical, vulvar, fallopian tube, or uterine cancer); receiving chemotherapy or radiation or was less than three months post-surgery; age ≥ 18 years; a Karnofsky Performance Status of ≥ 80 or an Eastern Cooperative Oncology Group (ECOG) (Zubrod et al., 1960) score of 0 or 1; lived within a two-hour commuting distance from the recruitment center; no neurological disorder; English speaking, and; no hearing impairment. There was no distress eligibility criterion. Study participants from the larger study ($N = 370$) were assigned randomly to CCI, SC, or UC. Randomization was stratified by baseline Beck Depression Inventory (BDI) score (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961).

One thousand four hundred twenty-four women were approached for the larger clinical trial. Of these, 364 consented and completed a baseline survey (24.9%), and 242 participants were assigned to an intervention condition. Of these, 119 were assigned to CCI and 123 were assigned to SC. Of the 242 participants assigned to an intervention condition, 224 (92.5%) attended Session 1. Seventeen women dropped before Session 1. These 224 participants were the sample analyzed for the current study. Comparisons between the 224 participants and 1060 refusers of the larger study indicated that participants were younger than refusers ($t(373) = 6.92, p < .001, M_{\text{participants}} = 55.0 (SD = 10.1), M_{\text{refusers}} = 60.3 (SD = 12.1)$), diagnosed more recently ($t(381) = 3.1, p < .01, M_{\text{participants}} = 3.7$ months, $M_{\text{refusers}} = 4.1$ months), and more likely to be diagnosed with ovarian cancer than other types of cancer (Chi-square = 7.2, $p < .01$), diagnosed with ovarian cancer $_{\text{participants}} = 62.7\%$, Diagnosed with ovarian cancer $_{\text{refusers}} = 53\%$). There were no differences with regard to race or stage of disease.

Models of Therapy

CCI and SC both consisted of seven weekly, hour-long individual sessions and one telephone booster session that took place three weeks after the seventh session. CCI session content focused on enhancing coping and support-solicitation skills, evaluating and altering life priorities, and identifying and dealing with emotional reactions to cancer. Sessions contained didactic content, in-session skill practice, and home assignments. SC was based primarily on client-centered techniques outlined in the *Clinical Manual of Supportive Psychotherapy* (Novalis, Rojcewicz, & Peele, 1993; Pinkske & Rosenthal, 1988). The goal of SC was to provide empathy and validation, encourage emotional expression, support existing coping, and enhance self-esteem. Supportive techniques included reflection, empathy, encouragement, reassurance, validation, and exploration of affective responses. Themes for the work were developed, in-session affect was fostered and explored, and summaries of thematic work were discussed in each session. CCI skills were not presented in SC. The CCI and SC manuals are available from the study's first author (SLM). All participants received medical treatment as usual in their respective medical settings.

Fifty-six therapists provided the interventions, with an average of four patients per therapist. All therapists were social workers, master-level or doctoral-level psychologists, or psychiatrists who were practicing in the community or employees of each cancer center. They had between one and 34 years of therapy experience. Different therapists were trained to provide the CCI and SC interventions. Therapists providing each intervention underwent six hours of training in the manual-based CCI intervention and equivalent training in SC. To facilitate treatment fidelity, the CCI manual was structured and contained in-session exercises and handouts for participants. The SC manual included readings on supportive counseling and a set of rules regarding what was considered supportive counseling (e.g., reflection, validation) and what was not considered supportive counseling (e.g., coping skills, didactic presentations). Telephone-delivered individual supervision was provided for each session delivered. Supervision consisted of provision of treatment integrity scores and discussion of fidelity issues. All sessions were audiotaped and treatment fidelity was rated by the supervisor on all sessions. Treatment fidelity was monitored for every session, and fidelity was excellent (CCI range = 81–93%).

Engagement in Therapeutic Interventions

In terms of session attendance, 221 women attended Session 2 (91.3%), 217 women attended Session 3 (96.4%), 212 attended Session 4 (94.2%), 208 attended Session 5 (92.4%), 206 attended Session 6 (91.6%), and 202 attended Session 7 (89.8%). Post-session surveys were administered after the seven in-person sessions, and formed the basis for the therapy process and short-term outcome data. Post-treatment surveys were collected approximately 9 weeks after the baseline (i.e., after the seven in-person sessions were completed). Post-treatment surveys were obtained from 199 participants (90%). There were no differences with regard to pre-treatment depression scores for the women who attended all sessions ($M = 13.64$, $SD = 7.34$) and those who missed one or more sessions ($M = 14.13$, $SD = 8.13$, $t(222) = .29$, $p = .77$). Given that the data analytic approach was multilevel modeling (MLM), which uses all available data and therefore does not delete women who missed some sessions, we did not impute missing values. We did, however, include the number of sessions attended as a control variable in analyses. Participants were paid \$25 for baseline and \$25 for each session attended to cover expenses.

Therapy process Measure

Early working alliance—Alliance was assessed using the Working Alliance Inventory (WAI) (Horvath & Greenberg, 1989). Respondents rated their level of agreement to statements using a 7-point Likert-type scale. The subscales assessed the goals of therapy, the tasks of therapy, and the bond that develops between the clinician and patient. The WAI is a widely-used measure that has well established reliability and validity (Hanson, 2002). In the current study, the WAI was administered after the second session. Cronbach's alpha was .90.

Short-term Therapy Outcome Measures

Post-session depressive symptoms—Post-session depressive symptoms were assessed using the BDI (Beck et al., 1961). The BDI is a 21-item scale which has been widely used in therapy studies (scale range, 0–63). It was given after each session, and participants rated how they felt “now.” Cronbach's alphas ranged from .78 to .85 across the sessions.

Patient- and Therapist-Rated session progress—The Session Progress Scale of the Therapy Session Report (Kolden 1991) is a six item scale assessing progress in dealing with problems, perceived changes as a result of the session, desire to take a new course of action, and session success on a 6 or 7-point Likert scale. Higher scores indicate more progress. The therapist scale consisted of two items that were rated on a similar 5-point Likert scale: “How much progress do you feel your patient made in dealing with her problems in this session?” and “To what degree do you think your client has resolved an important issue in this session?” The measure was given after each session to both patient and therapist. The therapist and patient did not view one another's ratings. Cronbach's alphas ranged from .70 to .79 for patients across sessions and .81 to .92 for therapists across sessions. Therapists did not have access to patient session progress ratings.

Long-term Therapy Outcome Measure

Depressive symptoms—Depressive symptoms were assessed using the Beck Depression Inventory (BDI; Beck et al., 1961). The scale was given pre-intervention and approximately three months later, after the psychological intervention treatment was completed. Cronbach's alpha was .83 at both time points.

Data analytic approach

Nonlinear growth model analyses of session outcomes and depression were conducted using MLM with SPSS Version 22. In these analyses, the three outcome variables reported for each session (i.e., patient-reported session progress, therapist-reported session progress, and mood) were predicted to be a function of time in weeks since session 1 (grand-mean centered so that the intercepts reflect the average value), a quadratic component of time in weeks, therapy type, and the interaction between the linear and quadratic components of time and therapy type. Because there was variation in the time between sessions across patients, we used individual-specific time intervals. All analyses included ethnicity (white/not white), education level (high school or less/some college or more), marital status (married/not married), patient age, time since diagnosis, functional impairment at session 1 (assessed using the Cancer Rehabilitation Evaluation System), metastatic status, and number of sessions attended as covariates. In all analyses the quantitative covariates were grand-mean centered, and therapy type and the categorical covariates were effect coded.

Random effects for the growth models included a variance in the patient intercepts and a variance in the patient linear slopes for time (there was not sufficient variance to include a random quadratic effect of time). Because grand-mean centering and effect coding were used, the patient intercept variance measures patient-to-patient variation in average session progress or depression. The variance in the patient slopes specifies that there may be differences across patients in the degree of linear change of session progress or depression over time. The final random effect was a variance for the therapist intercepts, which accounted for non-independence due to therapist because each therapist saw multiple patients.

To address Aim 2, measures of working alliance were added to the models. Analyses used nonlinear growth models that included the main effects and 2- and 3-way interactions between time, time-squared, therapy type, and the alliance variable, along with the same set of covariates described above. Significant interactions were decomposed using simple effects analyses in which we examined the effects of time for patients who were 1 SD above and below the mean on the moderating variable. To assess the mediational hypothesis in Aim 3 we used the SAS program to compute separate linear regression slopes for each participant, and then we used SPSS with a bootstrapping approach (with 5000 samples) as described in Preacher and Hayes (2008) to test whether change in session progress or depression mediate the association between working alliance and therapy outcomes.

Results

Descriptive Information about the Sample

Our sample was comprised primarily of white, college-educated, married women. More than half of the sample was diagnosed with ovarian cancer. The majority had advanced (stage 3 or 4) disease. The average time since diagnosis was about four months, and thus, most participants were diagnosed recently. See Table 1.

Descriptive Information for Variables

Table 2 presents descriptive information. Because of the multilevel nature of the data, for pairs of variables that varied together over time (e.g., session progress from patient and therapist), correlations were calculated by computing separate correlations for each patient over time and then averaging the correlations across patients. In contrast, working alliance, pre-intervention depression, and post-intervention depression were assessed only once, and thus correlations involving these variables were computed based on patient means for the time-varying variables. Correlations among the time-varying variables were relatively modest in size and statistically significant (Table 2). Correlations between the patient's average progress and the patients' reports of alliance were large, but those same correlations with therapist's average rating of session progress were modest in size. Table 3 presents the mean BDI scores for each session.

Changes in Session Progress and Post-session Depressive symptoms over Treatment

To address the first part of Aim 1, Table 4 presents the results for the basic growth models in which time (in weeks), time-squared, therapy type, the time by therapy type interaction and the time-squared by therapy type interaction were used to predict session progress and symptoms over the sessions. In terms of patient-rated session progress, there was a significant positive slope for linear time as well as a significant negative slope for quadratic time. At the study mid-point patients reported an increase of session progress of almost half a point per session. The standardized coefficient ($\beta = .381$) indicates that this was a relatively strong effect. The quadratic effect for time shows that the rate of increase in progress diminished over time. For example, at session 2, the predicted increase in progress for a one-week increase in time was $b = .650$ but by session 6 this slope was $b = .338$. No other variables significantly predicted the patient-rated progress.

Therapist-rated progress also increased over time ($\beta = .352$), but as with patients, the rate of increase diminished over the study, as indicated by the significant quadratic effect. There was a difference in the linear rate of change in progress across the two therapy types. Simple slopes analyses indicated that therapists administering CCI perceived significantly greater progress over time, $b = .200$, $t(308) = 12.29$, $p < .001$, compared to therapists administering SC, $b = .144$, $t(350) = 8.58$, $p < .001$. In addition, there was a significant effect marital status such that therapists reported greater average progress for patients who were not married.

Finally, patient's post-session depressive symptoms declined significantly over time ($\beta = -.208$), but the degree of decline was moderated over time as shown by the significant effect

for time-squared. There was no effect of therapy type. As can be seen in Table 4, there was evidence that patients reporting higher functional impairment at the beginning of the study reported higher average depressive symptoms ($\beta = .407$), but patients with metastatic disease reported significantly lower depressive symptoms ($\beta = -.112$). In sum, the growth model results show that session progress increased over the course of therapy and depressive symptoms decreased.

To evaluate whether progress in one session predicted perceived progress in the next session, we used a lagged model. The patient's evaluation of current session progress was predicted to be a function of the patient's evaluation of the previous session's progress and the therapist's evaluation of the previous session's progress. Treatment condition and all two- and three-way interactions between the patient and therapist perspectives on the previous session's progress and condition were included in the model (as were all covariates discussed previously). Results indicated that both therapist-rated previous progress ($\beta = .072$, $b = .192$, $se = .075$, $p = .010$) and patient-rated previous progress ($\beta = .223$, $b = .229$, $se = .029$, $p < .001$) showed significant effects predicting the patient's current evaluation of progress. Thus, both the therapist's and patient's evaluation of one session's progress independently predicted progress at the next session.

Working Alliance, Patient-reported Session Progress, and Post-session Depressive symptoms

To assess Aim 2, we expanded the nonlinear growth model approach to include moderation as a function of working alliance measured after Session 1. Given the small and non-significant slope variance for patient-reported progress, this random effect was dropped from the model. Table S1 presents the results for the working alliance analyses. Although not included in the table, the same covariates were included in each model. Including working alliance in the growth model predicting session progress resulted in a significant main effect for alliance ($\beta = .406$), a significant interaction between alliance and time ($\beta = -.083$), and a significant interaction between alliance and treatment condition ($\beta = -.107$). Consistent with the presence of the main effect for working alliance, simple slopes analyses indicated that when working alliance was high, average predicted progress was significantly higher (Intercept = 30.08) than when alliance was low (Intercept = 25.97). However, when alliance was high, the increase in session progress over time was significantly weaker ($b = .384$, $se = .032$, $\beta = .302$, $p < .001$) than when alliance was low ($b = .596$, $se = .047$, $\beta = .468$, $p < .001$). Following up the interaction between WAI and treatment condition, the simple slopes analysis also showed that when alliance was high, CCI was associated with higher average progress (CCI intercept = 30.55, SC intercept = 29.62, for the difference $b = -.461$, $se = .341$, $\beta = -.091$, $p = .178$), but when working alliance was low, patients reported higher progress in SC (CCI intercept = 25.34, SC intercept = 26.59, for the difference $b = .6233$, $se = .352$, $\beta = .123$, $p = .078$). Working alliance also showed a significant main effect in predicting lower post-session depressive symptoms ($\beta = -.199$). Patients who reported higher early alliance reported lower post-session depressive symptoms. The only other effect of alliance on depressive symptoms was a modest interaction with the quadratic effect of time ($\beta = .027$). Simple slopes analyses indicated that when alliance was low, the effect of time was characterized by a linear component of $b = -.284$, $se = .039$, $p < .001$, and a

quadratic component of $b = .010$, $se = .006$, $p = .089$. However, when alliance was high, the linear component was $b = -.363$, $se = .035$, $p < .001$ and the quadratic component was $b = .032$, $se = .006$, $p < .001$.

Associations between Working alliance and Short-term therapy outcomes with Post-treatment outcomes

To assess the mediational model suggested by GMP, we first used the program SAS Version 9.4 to compute separate linear regression analyses for each patient. These regressions produced estimates of separate intercepts and linear time slopes for each patient on patient-reported session progress and depression. We then used the INDIRECT macro described in Preacher and Hayes (2008) to test whether change in session progress or post-session depressive symptoms (i.e., the time slopes) mediate the association between working alliance and therapy outcomes. As our key measure of outcome we used the difference between BDI scores measured before treatment and after treatment was completed.

Results of these analyses indicated no evidence of mediation. This may be due to the fact that working alliance was not associated with the pre- to post-therapy change in the BDI, $r = .014$, $p = .853$. It is notable that the slopes for both patient-rated progress and post-session depressive symptoms over the course of therapy were significantly associated with change in BDI scores from pre- to post-treatment (for patient-reported progress, slopes $r = -.152$, $p = .034$ and for depression, slopes $r = .375$, $p < .001$). Thus, patients who reported stronger increases in session progress over time showed greater declines in pre-post treatment BDI scores, and patients who reported stronger decreases in depressive symptoms over the course of sessions showed greater declines in BDI from pre-to post-treatment. However, contrary to our prediction, the slopes for therapist-reported session progress were not related to change in pre-post treatment BDI, $r = .064$, $p = .372$.

Discussion

Although a number of effective therapies have been identified for cancer patients, relatively little is known about therapy processes as they unfold over the course of treatment. Moreover, little is known about the role of therapy processes in the efficacy of psychological interventions delivered to cancer patients. In the current study, we examined these two questions in a large randomized trial comparing two types of therapy delivered to cancer patients. There were four key findings. The first key finding regarded the positive short-term outcomes from both the patient and therapist perspectives. There was a steady increase in therapy progress over the course of both therapies, although CCI therapists perceived more progress for their patients, but these increases lessened over the course of therapy. Furthermore, changes in perceived progress built over time; that is, progress from one session strongly predicted progress in the subsequent session. Baseline demographic and medical characteristics did not predict changes in session progress, indicating that progress was not influenced by these patient characteristics. Depressive symptoms also steadily and significantly declined over the course of both treatments. Unlike session progress, demographic and medical characteristics of patients predicted changes in depressive symptoms in that older patients and patients with more physical impairment at the beginning

of treatment showed less improvement over the course of both treatments. Taken together, there was a similar and positive impact of both treatments on short-term therapy outcomes. Our findings are consistent with the construct of treatment outcome expectancy, which assesses the extent to which patients anticipate benefiting from therapy, and is an important predictor of treatment response (Katerelos et al., 2015; Rutherford et al., 2010). As patients perceive more progress, their expectancy for a beneficial treatment outcome increases.

The second key finding regards the role of these short-term therapy outcomes in post-treatment outcomes. Greater increases in patient-rated session progress predicted a greater decline in depression from pre- to post-treatment. Thus, patients recognized when they gained new skills and planned to take new courses of action because of the work of therapy, and these changes led to better post-treatment outcomes. Similarly, declines in depressive symptoms over sessions predicted better post-treatment outcomes. Overall, these findings support the role of patients' perspective of progress and patients' reports of depressive symptoms as markers of successful outcomes of therapy with women recently diagnosed with gynecological cancer, and are consistent with the role of positive treatment expectancies. However, our results indicate that therapists' perspectives on progress are less predictive of treatment outcome.

The third key finding regards the role of working alliance in treatment outcomes. Consistent with prior research with the general population, higher early alliance predicted lower average depressive symptoms over the course of treatment (Falkenstrom, Granstrom, & Holmqvist, 2013) and greater session progress (Kivlighan, Marmarosh, & Hilsenroth, 2014). Our findings extend this literature in two ways. First, our work illustrates that early working alliance is less predictive of improvements in session progress when a strong alliance is perceived early in therapy than when a strong alliance has not been built early in therapy. This finding was contrary to our initial hypothesis. Second, there were differences in the effects of working alliance on perceived session progress depending on the type of therapy. When early alliance was low, patients reported significantly higher perceived therapy progress in the less structured SC. Less structured approaches such as SC may offer the opportunity to build alliance over time. When early working alliance was high, the directive and prescriptive CCI was associated with higher perceived therapy progress, but this effect was not significant. A possible explanation for the association is that early alliance is particularly necessary for structured treatments which may focus less on building alliance and more on skills. CCI entailed problem-solving exercises (Session 2) and cognitive restructuring (Session 3) very early in treatment. For patients who have not yet formed a bond and may feel less comfortable, these activities may be experienced as less helpful. High alliance may mean the patient is ready to begin working on understanding cognitions, restructuring them, and problem-solving. Future studies may benefit from evaluating differences in these associations when alliance is measured in the middle phase of therapy.

The fourth key finding the absence of the proposed mediational role of short-term outcomes (e.g., session progress and depressive symptoms) in the association between early working alliance and pre- to post-therapy changes in depressive symptoms. These results were primarily due to the surprising finding that working alliance did not predict changes in depression pre- to post-treatment. As noted above, the slopes for session progress and post-

session depressive symptoms were significantly associated with change in depression from pre- to post treatment. Thus, although our findings may not support the role of early working alliance in long-term outcomes for these two therapy approaches, they suggest that therapists may be able to work with cancer patients to foster progress over time even when working alliance is low.

The study has several limitations. Most participants were white and well-educated. The majority was diagnosed with ovarian cancer and had metastatic disease. It is possible that the therapy processes and outcomes would differ among minority patients, patients with less education, and women with early stage gynecological cancers. We had a relatively low rate of study acceptance, particularly among older patients, patients who were not as recently diagnosed, and patients diagnosed with non-ovarian cancers. Our findings may not generalize to older, less recently diagnosed, and/or patients with non-ovarian gynecological cancer. Most participants were not clinically depressed or seeking therapy. Our findings may have differed for depressed cancer patients seeking psychotherapy. The treatments were offered as part of a clinical trial where each session was rated for fidelity to the treatment model and closely supervised and participants and therapists were aware. Whether the same associations would be seen outside of a research trial context is unknown. Working alliance was not assessed after every session and observer-rated measures of working alliance were not used. Our findings may have differed if we had used other measures or assessed changes in alliance. We did not assess other GMP processes such as therapeutic interventions, therapeutic realizations, and in-session impacts (e.g., emotional experiencing in session). We did not collect medical information during the time frame that therapy was being delivered, and changes in therapeutic progress could be influenced by medical stressors. We also did not assess the amount of time participants who were on anti-depressants had been taking these medications, which may have influenced their perceptions of treatment progress.

Our findings have clinical implications for therapy with cancer patients. Short-term therapy outcomes, which can be conceptualized as progress monitoring (Overington & Ionita, 2012), are associated with post-treatment gains. Although the measures used in this study are not as comprehensive as many next generation patient-reported therapy process monitoring scales (e.g., BASIS-24, Eisen et al., 2006), assessing session progress and depressive symptoms after sessions is a useful tool to assess therapy response. If progress does not illustrate a steady increase over the first several sessions, therapists should process this occurrence with their patients. Therapists' perceptions of session progress are less useful markers of treatment outcome and should not replace patient reports. Finally, for these two treatments for this particular cancer patient population, early working alliance predicted greater perceived progress but it did not contribute to pre- to post-treatment reduction in depressive symptoms. Whether this was due to the brief nature of the treatments or the fact that newly diagnosed cancer patients were being studied in a research setting, working alliance was not associated with treatment outcome.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Table 1

Demographic and Medical Data for Study Participants (N=224)

Variable	M	SD	Range	n	%
Age (years)	55.0	10.1	23–82		
Race					
White-Non-Hispanic				182	81.3
African American				25	11.2
Asian/Pacific Island				6	2.7
Hispanic				3	1.3
Other				7	3.1
Missing				1	0.4
Education Level					
< High school				36	16.1
Some college				37	16.5
College degree				46	20.5
Business or Trade School				5	2.2
>College education				99	44.2
Missing				1	0.5
Marital Status					
Married				147	65.6
Unmarried				77	34.4
Household income	\$125,581	\$119,796	0–\$7,000,000		
Primary Cancer					
Ovarian				141	62.9
Endometrial				31	13.8
Uterine				21	9.4
Fallopian				14	6.3
Cervical				6	2.7
Peritoneal				5	2.2
More than one				6	2.7
Time since diagnosis (months)	3.74	1.6	< 1–9.1		

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Variable	M	SD	Range	n	%
Stage					
I				39	17.4
II				29	12.9
III				107	47.8
IV				43	19.2
Unstaged/more than one stage				2	0.9
Missing				4	1.8
Metastatic Cancer					
Yes				109	48.7
No				113	50.4
Missing				2	0.9
Anti-depressant Medication (from chart review)					
Yes				62	27.7
No				159	71.0
Missing				3	1.3

Table 2

Means, Standard Deviations, and Correlations for the study variables

Measure	1.	2.	3.	4.	5.	6.
1. Patient-rated session Progress						
2. Therapist-rated session Progress	.31 ^{**}					
3. Post-session depressive symptoms	-.21 ^{**}	-.17 ^{**}				
4. Working Alliance	.54 ^{**}	.11	-.13			
5. Pre-treatment BDI	-.18 ^{**}	-.02	.71 ^{**}	-.08		
6. Post-treatment BDI	-.21 ^{**}	.00	.83 ^{**}	-.13	.58 ^{**}	
<i>M</i>	27.45	6.02	9.65	68.82	13.69	8.23
<i>SD</i>	5.07	1.95	6.52	11.20	7.41	5.79

Note.

^{*}
p < .05,^{**}
p < .01.

BDI= Beck Depression Inventory. Bolded correlations are averaged within person correlations across pairs of variables that varied over time and within patients. Correlations between working alliance and pre- and post-treatment BDI and the variables that varied by session were computed by creating mean scores across sessions for each patient and then correlating the patient means with the working alliance/pre-treatment, or post-treatment BDI measure.

Table 3

Means and Standard Deviations for Depressive Symptoms over Intervention Sessions

Session	Mean (SD)
Session 1	11.75 (6.60)
Session 2	10.60 (6.40)
Session 3	9.65 (6..80)
Session 4	9.40 (6.20)
Session 5	8.99 (6.40)
Session 6	8.43 (6.31)
Session 7	8.45 (6.30)

Predicting Change in Session Progress and Depressive Symptoms as a Function of Time (in weeks) and Therapy Condition

Table 4

	Patient-rated Session Progress			Therapist-rated Session Progress			Patient Post-Session Depressive Symptoms		
	β	<i>b</i>	<i>se</i>	β	<i>B</i>	<i>se</i>	β	<i>b</i>	<i>se</i>
Intercept	–	28.072	.446	–	6.286	.190	–	9.112	.592
Time	.381	.486**	.031	.352	.172**	.012	–.208	–.341**	.033
Time-squared	–.083	–.026**	.005	–.093	–.011**	.002	.056	.023**	.005
Therapy type	–.053	–.270	.286	–.039	–.076	.106	.056	.365	.377
Therapy × Time	.021	.027	.030	–.057	–.028*	.012	.019	.032	.033
Therapy × Time-squared	–.027	–.009	.005	.023	.003	.002	–.008	–.003	.005
Covariates									
Ethnicity/Race	.014	.072	.328	–.017	–.032	.098	.028	.180	.456
Education	–.098	–.498	.342	–.002	–.004	.102	.094	.614	.481
Marital Status	–.041	–.223	.268	–.087	–.169*	.082	–.065	–.422	.376
Time since Diagnosis	.035	.113	.169	–.007	–.008	.054	–.062	–.258	.236
Age	–.013	–.007	.026	–.023	–.004	.008	–.087	–.056	.036
Functional Impairment	–.007	–.002	.013	–.001	–.000	.004	.407	.134**	.018
Metastatic disease	–.037	–.187	.262	–.012	–.023	.081	–.112	–.728*	.367
Sessions Attended	.097	.493	.327	.100	.194	.110	–.064	–.415	.410
Random Effects									
Intercept Variance	10.453**	1.395		.701**	.114		23.849**	2.706	
Slope Variance	.002	.016		.001	.002		.121**	.022	
Therapist Variance	.901	.887		.902**	.253		.865	1.275	
Residual Variance	12.492	.570		1.898	.083		6.905	.312	

Note.

* $p < .05$,

** $p < .01$.

Time is measured in weeks since initial session. Therapy type is coded 1 = SC, –1 = CCI; Ethnicity/Race is coded White = 1, not White = –1; Education is coded Post-High school = 1, High School or less = –1; Marital status is coded Married = 1, not married = –1; Metastatic disease is coded 1 = metastasis, –1 = no metastasis. Time, Time since diagnosis, Age, Functional Impairment, and Number of sessions attended were grand-mean centered.