Patient Extratherapeutic Interpersonal Problems and Response to Psychotherapy for Depression

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Objectives: This paper aimed to synthesize empirical findings of patient extratherapeutic interpersonal variables associated with individual psychotherapy treatment outcomes in adult outpatients with depression.

Methods: A systematic search strategy was used to identify relevant studies. Thematic analysis was used to identify recurring themes in the findings.

Results: Forty studies met search criteria. Three themes of patient extratherapeutic interpersonal variables were identified: capacity to engage with others, capacity to navigate relationships, and capacity to achieve intimacy, progressing from basic to advanced levels of interpersonal interaction. Interpersonal variables such as interpersonal distress and style, attachment orientation, and quality of object relations were particularly useful in predicting treatment outcomes, whereas access to social support and marital status provided mixed results, likely because they do not account for relationship quality.

Conclusions: Recognizing variables associated with treatment response can help clinicians identify patients at risk for nonresponse and guide efforts for adapting existing therapies and developing new ones.

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Major depressive disorder is the most common psychiatric disorder and the leading cause of disability (1, 2) in the world. Although antidepressant medication and various psychotherapies have been shown to effectively treat major depressive disorder, many patients do not experience significant symptom relief (3–6). Identifying variables related to treatment response would increase understanding of treatment processes and clarify which treatments work best for whom.

Patient interpersonal problems are particularly relevant to understanding psychotherapy nonresponse for patients with depression. Social and interpersonal context has long been seen as critical to understanding the etiology of depression (7, 8). Exposure to interpersonally traumatic events in childhood attachment relationships predisposes individuals to adulthood depression via impairments in neuroregulatory systems related to stress and affect regulation (9). There is also evidence to suggest that the relationship between attachment security and depression may be mediated by social anxiety (10). The high comorbidity between depression and personality disorders suggests that individuals with personality pathology may be more prone to depression, potentially due in part to interpersonal problems common among individuals with personality disorders (11). Specifically, a submissive or hostile-submissive interpersonal style has been linked to development of depressive disorder (12). Additionally, growing empirical evidence suggests that the quality of an individual's social support protects against physical and mental illness, acts as a buffer against life stressors, and may be the aspect of life that people find most meaningful (13–15). A systematic review of studies investigating the link between social relationships and depression found that the relational factors most protective against the development of depression were perceived emotional and instrumental support and large social networks (16).

These findings coalesce to form a picture of human beings as interpersonal creatures who function optimally in the

HIGHLIGHTS

- Interpersonal difficulty frequently results in worse therapeutic outcomes for individuals with depression across therapeutic approaches.
- More-specific interpersonal variables, such as interpersonal distress and style, attachment orientation, and quality of object relations, appear to be clearer predictors of treatment outcome than more-general variables, such as access to social support and marital status, which fail to account for the quality of relationships.
- Greater standardization of depression outcome and interpersonal predictor variables across studies would allow for greater understanding of predictors of treatment outcome and clearer guidance in treatment choice.

context of positive relationships and deteriorate in multiple ways without interpersonal connection. Based on these ideas, a variety of interpersonally focused psychotherapies for depression have been developed, including interpersonal psychotherapy (IPT) (8), interpersonal reconstructive therapy (17), and brief dynamic interpersonal therapy (18). IPT in particular has been shown to be among the most established and efficacious treatments for depression (5).

The nature of patients' interpersonal problems may affect both the severity of their depressive symptoms and their responsiveness to psychotherapy (19, 20). Patients' interpersonal problems can occur both in their interactions with therapists as well as in their extratherapeutic relationships (outside of therapy). Extensive research has demonstrated that the quality of patients' in-therapy relationships affects psychotherapy outcomes (e.g., via the therapeutic alliance) (21–23). Efforts have been led to review the literature on the impact of specific extratherapeutic interpersonal factors on treatment outcomes for various disorders. For instance, a review of pretreatment predictors of cognitive therapy outcomes for patients with depression found that being married was related to both better response and a lower risk of relapse after treatment (24). A review of social factors influencing adolescent suicidality found significant links between suicidality and social integration, perceptions of social support, childhood interpersonal trauma, and peer victimization (25). A review of the literature on attachment and psychotherapy across a range of patient populations found that securely attached patients generally benefit more from psychotherapy than do insecurely attached patients (26). More specifically, in a meta-analysis of patients with a mix of presenting complaints, attachment anxiety showed a negative effect on posttreatment outcome, attachment security showed a positive effect on posttreatment outcome, and attachment avoidance was unrelated to outcome (27).

To our knowledge, there has been no attempt to bring together the literature on a broad range of extratherapeutic interpersonal factors and their relationship to psychotherapy outcomes for patients with depression. The aim of the current review was to synthesize the existing literature on the relationship between patient extratherapeutic interpersonal problems and psychotherapy outcomes for individuals with depression.

METHODS

Search Strategy

We began with a broad search for manuscripts in which patient or therapist variables were used to predict psychotherapy treatment outcomes to serve as the basis for identifying a range of variables associated with response to psychotherapy treatment for a variety of diagnoses. We conducted searches in the PsycINFO and Medline databases for literature on psychotherapy outcomes from January 1946 through May 2018, limited to English-language results only. Our primary search terms included "treatment outcome(s)" and "psychotherapy." To obtain the broadest range of variables associated with treatment outcomes within each database, we conducted searches with our primary search terms and one of each of our secondary search terms, including "moderators" (or other derivations such as "moderating"), "interaction(s)," "patient characteristics" or "client characteristics," "predictor(s)," and "therapist characteristics." From this broad search, we then screened for studies in which patient extratherapeutic interpersonal problems were compared with depression treatment outcomes. To ensure consistency of the results with regard to diagnostic labels, we limited our selection of studies to those published during or after 1994, when the *DSM-IV* was first published. Our initial search was intentionally broad to result in a more comprehensive review of the literature. Although screening for studies that examined interpersonal predictors of depression outcomes from our search terms was labor intensive, it resulted in confidence that the relevant articles had been included.

Inclusion Criteria

Empirical studies (including dissertations and non-peer-reviewed papers) that examined interpersonal variables in terms of their relationship with individual outpatient psychotherapy outcomes of adult clients (≥18 years of age) were eligible for initial inclusion. Theoretical, clinical, and review papers were excluded; however, some of these relevant papers are referenced above in this review. We included only manuscripts that examined variables describing some aspect of the patient's extratherapeutic interpersonal functioning. We excluded treatments conducted on inpatient units because the effect of individual psychotherapy would be difficult to separate from the impact of milieu, group treatments, medication, and other programming occurring on the unit. Studies that included group or couples therapies, computerized interventions, or telehealth components also were excluded. Trials with a medication arm were eligible for inclusion only if the study contained a psychotherapy component. We excluded studies that focused on patient populations in which the treatment approach would require significant modification because of co-occurring disorders, such as schizophrenia spectrum, substance-related, or eating disorders. We also excluded studies examining depression secondary to a specific medical condition, such as terminal illness.

Identification of Studies and Abstract Screening

Our literature searches in the PsycINFO and Medline databases yielded 6,618 abstracts. Members of the research team (C.K.C., N.N., L.J.C., A.F.G., F.M., R.W.B.) independently reviewed manuscripts for eligibility, and each manuscript was reviewed twice, by different reviewers. We conducted this process by first examining study titles for indications of characteristics that obviously met exclusion criteria, and then reviewed and further scrutinized relevant

abstracts for exclusion criteria. Any discrepancies that arose between the two reviewers were managed by reaching a consensus or by involving a third reviewer. After an in-depth screening of all abstracts, we identified 145 citations that met the criteria or required further review. We obtained full texts of the 145 articles and identified 40 that were relevant for inclusion. Figure 1 details the review process.

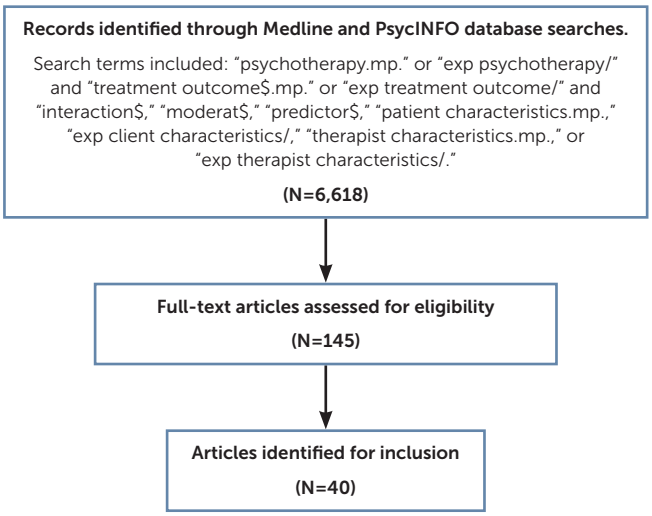
Data Synthesis and Analytic Approach

Given the diversity and inconsistency in study designs, statistical methods, and measures, an empirical meta-analysis was not feasible. Therefore, we used a qualitative approach to synthesize the findings across studies and organize the results for greater clarity. After reviewing the 40 articles, we applied thematic analysis (28). We used a realist, essentialist epistemological perspective to inform our approach to identifying patterns in the data and understanding the implications of these patterns. First, we distilled the findings of each article into codes that captured the meaning of each interpersonal predictor variable. These initial codes were then grouped into categories that were agreed upon by four of the authors (C.K.C., N.N., L.J.C., R.W.B.). Finally, we organized these categories into broader interpersonal themes. To maintain methodological rigor, themes and categories were continually refined until these four authors agreed that the themes, categories, and codes were coherent and accurately represented the initial data. These themes, however, reflect one way to organize the data, which was reached through consensus by four authors with research and clinical experience in this area; other ways of organizing the data are possible.

RESULTS

Forty studies were identified, reviewed, and included in the current study (Table 1). We identified three main themes of interpersonal functioning: capacity to engage with others (i.e., the ability to have people in one's life), capacity to navigate relationships (i.e., ability to maintain harmonious relationships), and capacity to achieve intimacy (i.e., ability to love and depend on others). The themes were organized as progressing from more basic to more advanced levels of interpersonal interaction. We used categories within each theme to capture and organize specific interpersonal variables. These categories are listed as subheadings within each theme and progress from general to specific factors that affect treatment outcomes. In cases where a predictor variable could fall into more than one category or theme, we included it in the more specific category and/or the more advanced theme. We included studies with multiple interpersonal predictor variables in all relevant categories. The categories under the capacity to engage with others theme were "access to social support," indicating the presence of others in one's life, and "marital status." Under the theme of capacity to navigate relationships, the categories were "interpersonal difficulty," indicating general level of interpersonal problems,

FIGURE 1. Literature review study selection process



and "interpersonal style," reflecting specific ways of relating that affect relationship functioning. Under the theme of capacity to achieve intimacy, the categories were "attachment," reflecting the capacity to trust that others can be reliably available and responsive to one's needs; "reliance on others," which is similar to attachment but measures specific aspects of the construct, such as comfort with closeness and ability to depend on others during times of stress; and "quality of object relations," indicating one's enduring patterns of engaging with others, ranging from immature (unstable, destructive) to mature (showing mutual concern, loving). It was not possible to completely disentangle the categories, however. For instance, marital status for some may indicate the capacity for intimacy, whereas for others it may signify only the presence of another in one's life. For this reason, we included marital status under the theme of capacity to engage, because knowing only whether or not one is married told us little about the quality of the relationship and whether it was harmonious, intimate, or provided any form of interpersonal support. We later discuss the need for more-specific measurement of such interpersonal variables to inform future work in this area.

While the variables studied were extratherapeutic, some of these variables also had bearing on therapeutic processes, such as therapeutic alliance. These findings are discussed where applicable. We have aggregated the results by theme in terms of the direction of the findings (Table 2). Studies with a positive finding were those that demonstrated the expected direction (e.g., greater access to social support predicted better depression outcomes); studies with a negative finding demonstrated the unexpected direction (e.g., greater access to social support predicted worse depression outcomes); studies with mixed findings had variables that had both positive and negative findings or found that the impact of the predictor variable differed by treatment type; and finally, studies with null findings found no support for the impact of the predictor variable on depression outcomes.

TABLE 1. Summary of interpersonal predictors of outcome in 40 studies of individual psychotherapy for depression, by theme and category of patient extratherapeutic interpersonal variables[a]

Study	Sample	Type of psychotherapy	Depression outcome measure and criteria	Interpersonal predictor	Major findings
Capacity to engage with others					
Access to social support					
Moos and Cronkite, 1999 (29)	313 patients with major depressive disorder	Unspecified (range of treatments in different outpatient settings)	Remission=DSSI <1 SD above baseline mean of nondepressed control group and no hospitalization for depression	HDL social functioning items	Patients who at baseline reported less time spent with friends were at greater risk of a chronic course of depression following treatment. Specifically, among participants who reported no time spent with friends, 55.4% obtained remission or partial remission from depression compared with 74.9% of those who did spend time with friends ($p<.001$).
Meyers et al., 2002 (30)	165 patients with major depressive disorder	Unspecified (range of treatments in different outpatient settings)	Remission=HRSD-17 score ≤6	Duke Social Support and Stress Scale	Social support was not a significant predictor of recovery from depression.
Coffman et al., 2007 (31)	88 patients with major depressive disorder	Cognitive therapy or behavioral activation	Extreme nonresponse= BDI-II ≥31	Qualitative analysis of session content	Patients experiencing more problems accessing their primary support group (e.g., because of a death in the family, divorce, estrangement, or health problems) were more likely to demonstrate extreme nonresponse to cognitive therapy but not to behavioral activation. Analysis was conducted as part of an assessment of randomization. The effect size for this relationship was not reported.
Bernecker et al., 2014 (32)	95 patients with major depressive disorder	IPT	BDI-II, HRSD-17, GAF	SSQ-B	At a trend-level ($p<.10$), increase in satisfaction with social support was associated with lower BDI-II.
Constantino et al., 2013 (33)	70 patients with primary diagnosis of major depressive disorder	IPT	Remission=criterion 1: BDI-II ≤14.29 and change in BDI-II ≥8.46 pts from baseline. Criterion 2: BDI-II ≤10.	SSQ6	Social support was not a significant predictor of remission from depression.
Lindfors et al., 2014 (34)	326 patients with anxiety or mood disorders	Short-term solution-focused therapy, short-term psychodynamic therapy, or long-term psychodynamic therapy	SCL-90-GSI	BISSI	Patients reporting lower levels of pretreatment social support (i.e., network size, satisfaction, and perceived availability of emotional support from friends and family) showed greater symptom reduction (40.0%) in short-term therapy than in long-term therapy (26.3%) at the 12-month follow-up (p value not reported). However, the difference was no longer significant at 24- and 36-month follow-ups.

continued

TABLE 1, *continued*

Study	Sample	Type of psychotherapy	Depression outcome measure and criteria	Interpersonal predictor	Major findings
Marital status					
Meyers et al., 2002 (30)	165 patients with major depressive disorder	Unspecified (range of treatments in different outpatient settings)	Remission=HRSD-17 score ≤ 6	Marital status	Patients who were married were more likely to experience early recovery from major depressive disorder (OR=2.4; 95% CI=1.1–5.3; p=.03).
Fournier et al., 2009 (35)	180 patients with major depressive disorder	Cognitive therapy	HRSD-17	Marital status	Patients who were married or cohabiting had lower depression scores at end of treatment (t=−3.13, df=156, p=.002). Additionally, for married or cohabitating participants, cognitive therapy resulted in lower depression scores following treatment than antidepressant medication (Cohen's d=1.04+.58 [95% CI], p<.001).
Jarrett et al., 2013 (36)	410 patients with recurrent major depressive disorder	Cognitive therapy	Nonresponse=met *DSM-IV* criteria for major depressive disorder and/or HRSD-17 >12	Marital status	Marital status was not predictive of treatment response.
Bastos et al., 2017 (37)	272 patients with moderate depression	Long-term psychodynamic psychotherapy	BDI	Marital status	Marital status was not predictive of treatment response.
Lemmens et al., 2016 (38)	117 patients with depression; 58% met criteria for severe depression (BDI-II ≥29)	Cognitive therapy or IPT	BDI-II	Marital status	Marital status was not predictive of sudden gains that were predictive of treatment response (44.4% of the sudden-gain patients met criteria for remission [BDI-II <9] versus 25.0% of those without sudden gains χ^2=4.21, df=1, p=.04).
Menchetti et al., 2014 (39)	287 patients with major depressive disorder (136 received interpersonal counseling, 139 received SSRI)	Interpersonal counseling	Remission=HRSD score ≤7	Marital status	Unmarried patients were more likely to remit from therapy (73% unmarried vs. 57% married) (p value was not provided).
Barber and Muenz, 1996 (40)	88 patients with major depressive disorder	Cognitive therapy and IPT	BDI-I, HRSD-17	Marital status	A marital status by treatment interaction existed where IPT was relatively more effective than cognitive therapy with single or separated or divorced patients, whereas cognitive therapy was relatively more effective than IPT with married or cohabiting patients as measured by the HRSD (β=8.10, p=.0021) and on the BDI (β=12.56, p=.0023).

continued

TABLE 1, *continued*

Study	Sample	Type of psychotherapy	Depression outcome measure and criteria	Interpersonal predictor	Major findings
De Bolle et al., 2010 (41)	567 patients with major depressive disorder	Supportive, cognitive-behavioral, and psychodynamic therapy	MADRS	Marital status	Patients who were divorced or separated were more affected by therapeutic alliance (HAQ-I) on outcome than married patients (Cramér's V=.11; $p<0.01$). Marital status as a moderator of the effect of therapeutic alliance on outcome was not significant when comparing married patients to widow(er)s or single patients.
Capacity to navigate relationships					
Interpersonal difficulty					
Meyers et al., 2002 (30)	165 patients with major depressive disorder	Unspecified (range of treatments in different outpatient settings)	Remission=HRSD-17 score ≤6	IIP	A higher percentage of patients with interpersonal problems above the cutoff score for personality dysfunction (67.5%) did not recover from major depressive disorder than those with interpersonal problems below the cutoff score for personality dysfunction (32.5%; p=0.03). Patients who recovered from major depressive disorder showed a trend in scoring higher in social functioning (SF-36=53.1) than patients who did not recover (SF-36=43.9; p=0.07).
Connolly Gibbons et al., 2003 (42)	201 patients with major depressive disorder (50%), generalized anxiety disorder (33%), avoidant personality disorder (35%), obsessive-compulsive personality disorder (19%), dysthymia (17%), social phobia (27%), simple phobia (12%), and anxiety disorder not otherwise specified (23%)	Cognitive therapy or psychodynamic (expressive/supportive) therapy	BDI-I	IIP	Greater interpersonal difficulties were associated with greater depression at session 10 (r=0.34, $p<0.05$).
Renner et al., 2012 (43)	523 patients with recurrent major depressive disorder	Cognitive therapy	Change in HRSD-17	IIP	Elevated baseline IIP interpersonal distress scores were associated with more symptoms (F=24.82, df=1, 521.12, $p<.01$) throughout treatment.

continued

TABLE 1, *continued*

Study	Sample	Type of psychotherapy	Depression outcome measure and criteria	Interpersonal predictor	Major findings
Jarrett et al., 2013 (36)	410 patients with recurrent major depressive disorder	Cognitive therapy	Nonresponse=met *DSM-IV* criteria for major depressive disorder and/or HRSD-17 >12	SAS-SR, DAS-A, IIP	Patients self-reporting more dissatisfaction with their social roles were less likely to respond to cognitive therapy after the analysis was controlled for pretreatment depression symptoms (OR=.517, 95% CI=.32, .83). Self-report rating of statements related to relationships on DAS-A were not significantly different between responders and nonresponders (F=.09, df=1, 395, p=.77). There was a trend-level difference on interpersonal difficulty based on the IIP mean score between responders and nonresponders, with nonresponders endorsing more interpersonal difficulty (F=3.96, df=1, 404, p=.05).
Altenstein-Yamanaka et al., 2017 (44)	144 patients with major depressive disorder	CBT or exposure-based cognitive therapy for depression	BDI-II, IDS-C, SCL-9	IIP-32	Pre-post change in IIP distress was positively associated with pre-post change in BDI-II (r=.181, p=.047) and IDS-C (r=.320; p=.001), but not with pre-post change in SCL-9 (r=.133; p=.145). IIP distress did not predict symptomatic change from termination to follow-up.
Denton et al., 2010 (45)	171 patients with chronic major depressive disorder	Cognitive-behavioral analysis system of psychotherapy	IDS-SR30 <15; equivalent to HRSD <8	MAS	Patients with dyadic discord at baseline had lower remission rates (34.1%) compared with those without dyadic discord (61.2%) in all three groups (p=0.0004): psychotherapy, medication, combined treatment.
Whisman, 2001 (46)	64 patients with major depressive disorder	CBT and IPT	Change in BDI-I, change in HRSD-17	MAS	Patients with better pretreatment marital adjustment had lower depression scores at end of treatment (r=0.41, p<0.01) and 6-month follow-up (r=0.27, p<0.05) on the HRSD but not on the BDI. Patients with better posttreatment marital adjustment had significantly better outcomes at 6-month (r=.39, p<.01), 12-month (r=.51, p<.001), and 18-month follow-up (r=.43, p<.001) on the HRSD. Patients with better posttreatment marital adjustment had significantly better outcomes at 12 months on the BDI (r=.43, p<.001) but not at 6 or 18 months.

continued

TABLE 1, *continued*

Study	Sample	Type of psychotherapy	Depression outcome measure and criteria	Interpersonal predictor	Major findings
Kung and Elkin, 2000 (47)	96 patients with major depressive disorder	IPT or CBT	BDI-I and HRSD-17	MAS modified so scores based on clinical evaluation rather than self-report	Marital adjustment at intake was not a significant predictor of depressive symptoms at termination. Patients with higher marital adjustment at termination and higher marital improvement over the course of treatment showed lower depressive symptoms and improved social functioning at 6-months (Λ=.89, df=1, 71, p=.02), at 12-months (Λ=.66, df=1, 67, p<.001), and 18-month (Λ=.80, df=1, 70, p<.001) follow-up.
Bernecker et al., 2014 (32)	95 patients with major depressive disorder	IPT	BDI-II, HRSD-17, GAF	DAS, IIP	Decrease in dyadic adjustment was related to lower posttreatment depression scores (β=2.028, p=.008, BDI-II self-rated; β=1.474, p=.022, HRSD-17 clinician-rated). At a trend-level (p<.10), decrease in interpersonal problems was associated with lower BDI-II score.
Constantino et al., 2013 (33)	70 patients with primary diagnosis of major depressive disorder	IPT	Remission=criterion 1: BDI-II≤14.29 and change in BDI-II ≥8.46 pts from baseline; criterion 2: BDI-II ≤10	DAS, IIP	Interpersonal problems and dyadic adjustment were not significantly associated with depression outcomes.
Interpersonal style					
Quilty et al., 2013 (48)	125 patients with major depressive disorder	CBT or IPT	Change in BDI-II, change in HRSD-17	IIP-32	Pretreatment IIP-32 agency and amplitude were associated with decreased change in depression on the HAM-D (r=−.45, p<.01; r=−.29, p<.05) and on the BDI-II (r=−.44, p<.01; r=−.38, p<.01).
Altenstein-Yamanaka et al., 2017 (44)	144 patients with major depressive disorder	CBT or exposure-based cognitive therapy for depression	BDI-II, IDC-S, SCL-9	IIP, IMI rated by significant other	Changes in IMI dimensions were not associated with any of the pre-post changes in BDI-II, IDS-C or SCL-9 at termination. Increases in IMI agency were significantly associated with lower 3-month follow-up change in BDI-II (r=−.23; p=.03) and SCL-9 (r=−.23; p=.03), but not with change in IDS-C (r=−.14; p=.17). IMI communion, IIP agency, and IIP communion did not have a significant effect on symptom change at termination or follow-up.
Renner et al., 2012 (43)	523 patients with recurrent major depressive disorder	Cognitive therapy	Change in HRSD-17	IIP	Higher baseline IIP-C agency scores had lower symptom scores in the middle and end of cognitive therapy (F=1.56, df=18, 6,038.06, p=.06).

continued

TABLE 1, *continued*

Study	Sample	Type of psychotherapy	Depression outcome measure and criteria	Interpersonal predictor	Major findings
Marquett et al., 2013 (49)	60 older adults with major depressive disorder, dysthymic disorder, or minor depressive disorder	CBT	Change in BDI-II	Locus of control	Patients self-reporting an external locus of control had a poorer response to treatment (β=2.11, p=.02). However, those who reported a tendency to assign blame for a stressful event to someone else were more likely to benefit from treatment (β=−1.94, p=.02).
Capacity to achieve intimacy					
Attachment security					
Saatsi et al., 2007 (52)	110 patients with major depressive disorder	Cognitive therapy	BDI-I or BDI-II	IIP and attachment vignettes combined	Secure patients (adjusted M=9.51, SD=3.24) had significantly lower posttreatment depression scores than avoidant (adjusted M=17.46, SD=1.86, p=.05) and ambivalent (adjusted M=19.66, SD=3.24, p=.05) patients. The effect size for the association between attachment style and outcome was .80. Therapeutic alliance appeared to mediate the relationship between attachment style and outcome.
Reis and Grenyer, 2004 (53)	58 patients with major depressive disorder	Supportive-expressive dynamic therapy	HRSD-17; remission=HRSD score ≤7	RQ	Patients with a fearful attachment style demonstrated poorer overall treatment response (r=−.31, p<.05). Patients achieving remission reported significantly lower levels of fearful (t=−2.45, p=.02) and preoccupied attachment (t=−2.64, p=.01) at baseline than those who did not remit. Symptom remission was not predicted by dismissive avoidant attachment; however, a trend association in the expected direction between dismissive attachment and treatment response late in therapy was found (β=−.26, p=.08).
Constantino et al., 2013 (33)	70 patients with primary diagnosis of major depressive disorder	IPT	Remission=criterion 1: BDI-II ≤14.29 and change in BDI-II ≥8.46 pts from baseline; criterion 2: BDI-II ≤10	RSQ, ECR	Pretreatment score on fearful attachment (on RSQ only) was found to be the best predictor of depression remission (criterion 1: χ^2=7.172, p<.01; criterion 2: χ^2=7.792, p<.01). Patients with lower pretreatment fearful scores (<3.75) were more likely to remit (criterion 1: 81% [26/32]; criterion 2: 80% [16/20]) than patients with higher pretreatment scores (≥3.75) (criterion 1: 44% [8/18], criterion 2: 40% [12/30]). Other attachment styles were not predictive of outcome.

continued

TABLE 1, *continued*

Study	Sample	Type of psychotherapy	Depression outcome measure and criteria	Interpersonal predictor	Major findings
Cyranowski et al., 2002 (54)	162 women with recurrent major depressive disorder	IPT	HRSD-17 <7 for 3 consecutive weeks during first 24 weeks of treatment	RQ	Attachment group categorization did not distinguish between patients who did or did not remit with IPT treatment; however, there was a positive association between high fearful avoidant attachment ratings and longer time to clinical stabilization among patients who achieved remission with IPT (r=.32, p<.01). High secure attachment ratings showed a trend toward shorter time to stabilization among patients achieving remission with IPT (r=−.19, p<0.08).
Bernecker et al., 2014 (32)	95 patients with major depressive disorder	IPT	BDI-II, HRSD-17, GAF	ECR	At a trend-level (p<.10), decrease in attachment avoidance was associated with higher GAF. Changes in attachment anxiety were not significantly related to depression outcomes.
Barber and Muenz, 1996 (40)	88 patients with major depressive disorder	Cognitive therapy and IPT	BDI-I, HRSD-17	PAF	Patients who scored higher for avoidant personality disorder characteristics responded better to cognitive therapy than IPT on both the BDI-I and HRSD-17 (r=.33).
McBride et al., 2006 (55)	56 patients with major depressive disorder	CBT and IPT	Change in BDI-II, change in HRSD	RSQ	Patients with high attachment avoidance responded better to CBT compared with IPT, even after the analysis was controlled for personality dysfunction. On the BDI-II, changes in depression were significant for CBT (β=−.44, p<.05) but not for IPT (β=.30, p>.05). Similarly, for the HAM-D, changes in depression in CBT were significant (β=−.55, p<.05) but not for IPT (β=.18, p>.05).
Bernecker et al., 2016 (56)	69 patients with major depressive disorder	CBT and IPT	BDI-II (self-report); HAM-D-6 (clinician-rated)	RSQ, ECR-R	CBT and IPT were equally effective regardless of patients' attachment styles. Across treatments, attachment avoidance was marginally associated with outcome, such that higher avoidance was associated with greater self-reported (ECR-R avoidance β=.27, p=.06) and clinician-rated (ECR-R avoidance β=.27, p=.06; RSQ avoidance β=.35, p=<.01) depression at termination. Attachment anxiety was associated with lower clinician-rated (ECR-R anxiety β=−.28, p=.04); RSQ anxiety (β=−.30, p=.02) but not self-reported depression at termination.

continued

TABLE 1, *continued*

Study	Sample	Type of psychotherapy	Depression outcome measure and criteria	Interpersonal predictor	Major findings
Reliance on others					
Byrd et al., 2010 (57)	66 patients with mood, anxiety, and adjustment issues at a university graduate program training clinic	Psychotherapy from interpersonal, CBT, psychodynamic, eclectic orientations	Outcome Questionnaire-45	AAS	Patients who were more comfortable with closeness ($r=-0.37$, $p<.05$) and comfortable depending on others ($r=-0.37$, $p<0.05$) showed greater gains in overall functioning at end of treatment. Rejection anxiety was not significantly related to outcome.
Marquett et al., 2013 (49)	60 older adults with major depressive disorder, dysthymic disorder, or minor depressive disorder	CBT	BDI-II	Brief Cope	Patients self-reporting high use of emotional support in coping with stressful events were more likely to benefit from treatment ($\beta=-1.95$, $p=.01$).
Zlotnick et al., 1996 (58)	188 patients with major depressive disorder	CBT and IPT	BDI-I	Life Events Inventory interpersonal stress items, Social Network Form	Greater social support ($\beta=-1.88$, $p=0.0002$), particularly the presence of close friends who act as confidants ($\beta=-2.95$, $p=0.0001$), was associated with lower depression scores at 6-month follow-up.
Moos and Cronkite, 1999 (29)	313 patients with major depressive disorder	Unspecified	Remission=DSSI <1 SD above baseline mean of nondepressed control group and no hospitalization for depression	Responses on a 4-pt scale from "never" to "fairly often" to 1) "avoid being with people in general" and 2) "keep your feelings to yourself when coping with stressful situations"	Patients who at baseline reported greater social avoidance, particularly those who cope with stressors by avoiding, rather than seeking, social support, were at greater risk of a chronic course of depression following treatment. Specifically, among those who reported avoidance of people, 57.1% achieve partial or full remission compared with 75.0% who did not avoid people ($p<.001$).
Shahar et al., 2004 (59)	144 patients with major depressive disorder	IPT or CBT	Latent variable consisting of BDI-II, SCL-90, HRSD-17, and GAS as indicators	DAS-A, Social Network Form	Patients with high levels of perfectionism, related to avoidance of intimacy and self-disclosure, had worse treatment outcomes ($\beta=-.32$, $p<0.001$). This relationship was mediated by the quality of the patient's social network. Correlation between latent variables social network and symptoms posttreatment ($r=-.52$, $p<0.01$).

continued

TABLE 1, *continued*

Study	Sample	Type of psychotherapy	Depression outcome measure and criteria	Interpersonal predictor	Major findings
Hardy et al., 2001 (60)	24 patients with major depressive disorder	Cognitive therapy	BDI-I	IIP, DAS-A	Patients with "underinvolved" ($r=0.62$, $p<0.01$) and "overinvolved" ($r=0.51$, $p<0.01$) interpersonal styles had higher depression scores at the end of treatment, after the analysis was controlled for pretreatment scores. Therapeutic alliance appeared to mediate the relationship between interpersonal style and outcome.
Quality of object relations					
Van et al., 2008 (63)	81 patients with major depressive disorder	Short-term dynamic supportive therapy	HRSD-17	DP	The overall maturity of object relations did not predict outcome; the only subscale of the object relationships measure to predict outcome was individuation, where patients with higher individuation scores (representing an experience of the other as equal, experience of self that is consistent, and appropriate relationships needs) showed better psychotherapy outcomes ($\beta=0.26$; $p=0.02$).
Zilcha-Mano et al., 2016 (64)	149 depressive patients	Supportive expressive therapy (SET) or placebo (PBO) or medication	HRSD-17	CRQ-R	Reduction in negative representation predicted subsequent reduction in depressive symptoms ($\beta=1.97$, $t=2.15$, $df=70$, $p=.03$). No significant main effect was found for positive relationship representations ($p=.74$). However, a significant interaction was found between positive relationship representations and treatment condition ($F=3.19$, $df=2, 56$, $p=.04$) such that greater improvement in positive relationship representations predicted greater symptom reduction in SET than in PBO ($\beta=4.97$, $t=2.18$, $df=56$, $p=.02$), but not in medication vs. PBO ($\beta=0.33$, $t=1.71$, $df=56$, $p=.84$).
Høglend and Piper, 1995 (66)	107 patients with adjustment disorders, anxiety, and affective disorders across two independent studies	Brief psychodynamic therapy	Composite measures each with 2 factors: general symptoms/dysfunction and individualized problems (in one sample) or dynamic change (in another sample)	QORS	At 5-month follow-up, patients with high QOR showed a trend toward fewer symptoms and less general dysfunction after a treatment with greater focal adherence in one of two samples studied ($r=.39$, $p<.10$). Patients with low QOR had significantly more favorable outcome at follow-up after a treatment with less focal adherence in both samples studied (at 4 years $r=-.40$, $p<.05$ and at 5 months $r=-.49$, $p<.05$).
Piper et al., 1998 (67)	144 patients with major depression (48.6%) and dysthymia (26.4%), anxiety disorder (7.6%), adjustment disorder (6.9%), and alcohol abuse (6.2%)	Interpretive and supportive forms of short-term psychodynamic therapy	BDI-I	QORS	Patients with high QOR had more favorable depression outcomes with interpretive therapy ($r=-.26$, $p<.05$). QOR was not significantly related to depression outcome in supportive therapy ($r=.07$, ns).

continued

TABLE 1, *continued*

Study	Sample	Type of psychotherapy	Depression outcome measure and criteria	Interpersonal predictor	Major findings
Piper et al., 2004 (62)	171 patients; the most frequent disorders were current major depression (48.6%) and dysthymia (26.4%), followed by anxiety disorder (7.6%), adjustment disorder (6.9%), and alcohol abuse (6.2%)	Interpretive and supportive forms of short-term psychodynamic therapy	Composite measure with 3 factors: general symptomatology and dysfunction, social-sexual maladjustment, and nonuse of mature defenses and family dysfunction	QORS	For patients receiving interpretive therapy, a significant interaction effect for patient-rated pattern of alliance and QOR was found with general symptoms (effect size r was .26, p=.03). For patients with high QOR, greater increases in patient-rated alliance was associated with better outcome. For low QOR patients, greater decrease in patient-rated alliance was associated with better outcome. A main effect of QOR was found for each of the three outcome factors: general symptoms, r=.29, p=.02; social-sexual, r=.41, p=.001; and nonuse of mature defenses and family pathology, r=.24, p=.04. For patients receiving supportive therapy, QOR did not emerge as a moderator.
Høglend et al., 2006 (68)	100 patients; the most frequent disorders were major depressive disorder single episode (28%), major depressive disorder recurrent (16%), dysthymia (14%)	Psychodynamic therapy separated into two groups with and without transference interpretations	Psychodynamic functioning scales, GAF	QORS	Patients with low QOR showed a trend toward better treatment outcomes on the psychodynamic functioning scales (Cohen's d=.54, p=.08) and on the GAF (Cohen's d=.55, p=.08) with treatment that included transference interpretations. Outcomes of patients with high QOR showed no difference across groups with or without transference interpretations.
Høglend et al., 2011 (65)	100 patients with depression and anxiety	Psychodynamic therapy	Psychodynamic functioning scales	QORS	The association between working alliance and the effects of transference work varied significantly depending on level of QOR (β=−1.7, p=0.03). Patients with low QOR were more positively affected by transference interpretations in the context of a weak therapeutic alliance, whereas for patients with high QOR and high alliance, a negative effect of transference work was found. The effect size for this relationship was 0.49.

continued

TABLE 1. *continued*

Study	Sample	Type of psychotherapy	Depression outcome measure and criteria	Interpersonal predictor	Major findings
Lindfors et al., 2014 (34)	326 patients with anxiety or mood disorders	Short-term solution-focused therapy, short-term psychodynamic therapy, or long-term psychodynamic therapy	SCL-90-GSI	QORS	Among those with high QORS, faster benefits appeared during the 7-month and 1-year follow-up in short-term therapy; however, at the 3-year follow-up, long-term psychodynamic therapy resulted in greatest improvement with a mean SCL-90-GSI score of .82 and a 32% reduction of symptoms in the short-term groups and SCL-90-GSI score of .64 and a 49% reduction of symptoms in the long-term group. No significant differences were found between therapy groups among those with low QORS at termination; however, nonsignificantly greater benefits were seen for those in long-term therapy at 2- and 3-year follow-up.

[a] AAS, Adult Attachment Scale; BDI, Beck Depression Inventory; BISSI, Brief Inventory of Social Support and Integration; CBT, cognitive-behavioral therapy; CRQ-R, Central Relationship Questionnaire-Revised; DAS, Dysfunctional Attitudes Scale; DP, developmental profile; DSSI, Depressive Symptom Severity Index; ECR, Experiences in Close Relationships Scale; ECR-R, Experiences In Close Relationships Scale-Revised; GAF, Global Assessment of Functioning Scale; GAS, Global Assessment Scale; GSI, Global Severity Index; HAM-D, Hamilton Depression Scale; HAQ-I, Helping Alliance Questionnaire; HDL, Health and Daily Living Form; HRSD, Hamilton Rating Scale for Depression; HRSD-17, Hamilton Rating Scale for Depression–17 item; IDS-SR; Inventory of Depressive Symptomatology–Self-Rated; IDS-C, Inventory of Depressive Symptomatology–Clinician Rated; IIP, Inventory of Interpersonal Problems; IIP-C, Inventory of Interpersonal Problems–Circumplex; IMI, Impact Message Inventory; IPT, interpersonal psychotherapy; MADRS, Montgomery Åsberg Depression Rating Scale; MAS, Marital Adjustment Scale; OQ-45, Outcome Questionnaire–45; PAF, Personality Assessment Form; QORS, Quality of Object Relations Scale; RQ, Relationship Questionnaire; RSQ, Relationship Scales Questionnaire; SAS-SR, Social Adjustment Scale–Self Report; SCL-90-GSI, Symptom Checklist–90 Global Severity Index; SCL-9, Symptom Checklist–9 item; SSQ-B, Social Support Questionnaire–Brief; SSRI, selective serotonin reuptake inhibitor.

Capacity to Engage With Others

This theme was used to capture the most basic level of interpersonal relatedness, the presence or absence of people in one's life. Variables within this theme assess the individual's access to others but do not specify the quality of these interactions. The primary categories of predictor variables comprising this theme are access to social support and marital status.

Access to social support. The association between access to social support and posttreatment depression is complex and may differ by treatment type Of two outpatient studies that used an unspecified range of depression treatments, one found that patients who spend less time with friends were less likely to obtain remission or partial remission from depression (29), whereas the other found no relationship between access to social support and depression outcome (30).

However, initial evidence has suggested that the presence of social support may increase the likelihood of positive treatment response to cognitive therapy but not to behavioral activation therapy (31). A trend toward positive response to IPT was found in one study (32), although no significant relationship was found in another study (33). Additionally, one study found that patients with depression who report low levels of social support respond more quickly to solution-focused and short-term psychodynamic therapy than to long-term psychodynamic therapy (34), which may reflect patient difficulty in forming the strong therapeutic alliance necessary to benefit from longer-term psychotherapy.

Marital status. Studies examining the effect of marital status on treatment outcome have yielded mixed results. Some studies have found that being married was related to better response and/or to lower risk of relapse after treatment (30, 35). In contrast, two studies found that marital status was not a significant predictor of treatment response following cognitive therapy (36) or psychodynamic therapy (37) or after sudden gains in cognitive therapy or IPT that typically predicted positive treatment response (38). Finally, another study found that after six to eight sessions of interpersonal counseling, unmarried patients were significantly more likely to achieve remission than married patients (39). That study, however, excluded patients who had been treated for more than two depressive episodes, which could affect generalization of these findings to patients with chronic depression or to those who use mental health care services more often.

The effect of marital status on treatment response may vary by treatment type. IPT was found to be relatively more effective than cognitive therapy for single, separated, or divorced patients, whereas cognitive therapy was relatively more effective than IPT for married or cohabitating patients (40). Additionally, the impact of marital status on treatment outcome may be influenced by other variables.

TABLE 2. Effect of interpersonal predictor variables on therapy outcomes in depression, by theme and category of patient extratherapeutic interpersonal variables

Category	Positive findings	Negative findings	Mixed findings	Null findings
Capacity to engage with others				
Access to social support (N=6)	Moos and Cronkite, 1999 (29); Coffman et al., 2007 (31)[a]; Bernecker et al., 2014 (32)[b]		Lindfors et al., 2014 (34)	Constantino et al., 2013 (33); Meyers et al., 2002 (30)
Marital status (N=8)	Meyers et al., 2002 (30); Fournier et al., 2009 (35)	Menchetti et al., 2014 (39)	Barber and Muenz, 1996 (40); DeBolle et al., 2010 (41)	Jarrett et al., 2013 (36); Bastos et al., 2017 (37); Lemmens et al., 2016 (38)
Capacity to navigate relationships				
Interpersonal difficulty (N=10)	Meyers et al., 2002 (30); Connolly Gibbons et al., 2003 (42); Renner et al., 2012 (43); Jarrett et al., 2013 (36); Altenstein-Yamanaka et al., 2017 (44); Whisman et al., 2001 (46); Denton et al., 2010 (45); Kung and Elkin, 2000 (47)		Bernecker et al., 2014 (32)	Constantino et al., 2013 (33)
Interpersonal style (N=4)	Quilty et al., 2013 (48); Altenstein-Yamanaka et al., 2017 (44); Renner et al., 2012 (43)		Marquett et al., 2013 (49)	
Capacity to achieve intimacy				
Attachment security (N=8)	Saatsi et al., 2007 (52); Reis and Grenyer, 2004 (53); Constantino et al., 2013 (33); Bernecker et al., 2014 (32)[b]; Bernecker et al., 2016 (56)		Cyranowski et al., 2002 (54)	Barber and Muenz, 1996 (40); McBride et al., 2006 (55)
Reliance on others (N=6)	Byrd et al., 2010 (57); Marquett et al., 2013 (49); Zlotnick et al., 1996 (58); Moos and Cronkite, 1999 (29); Shahar et al., 2004 (59); Hardy et al., 2001 (60)			
Quality of object relations (N=8)	Van et al., 2008 (63); Zilcha-Mano et al., 2016 (64); Piper et al., 1998 (67); Lindfors et al., 2014 (34)		Høglend and Piper, 1995 (66); Piper et al., 2004 (62); Høglend et al., 2006 (68); Høglend et al., 2011 (65)	

[a] Qualitative association.
[b] Trend-level association.

For example, marital status may moderate the relationship between therapeutic alliance and treatment outcome for supportive, cognitive-behavioral therapy (CBT), and psychodynamic therapy, such that therapeutic alliance had a greater impact on treatment outcome for divorced or separated patients than it did for married patients (no differences were found between therapeutic approaches) (41).

Capacity to Navigate Relationships

Once individuals are engaged with others, the ability to navigate the complex world of relationships requires interpersonal skills and understanding of one's impact on others. This theme reflects whether one experiences relationships as harmonious or challenging. Categories under this theme, interpersonal difficulty and interpersonal style, capture predictor variables ranging from general difficulty navigating relationships to specific personality factors, such as dominance, rigidity, and external locus of control, that contribute to these difficulties.

Interpersonal difficulty. There is ample evidence for an association between psychotherapy outcome and interpersonal

difficulty. Patients who report fewer interpersonal problems or difficulties were more likely to recover from major depressive disorder, have less patient-rated depression at session 10, or have fewer symptoms throughout treatment across a range of therapies, including cognitive therapy and psychodynamic therapy (30, 36, 42, 43). Consistent with these findings, a study comparing CBT to exposure-based CBT for depression found that pre-post changes in interpersonal problems were associated with pre-post changes in depression at termination of therapy, although not from termination of therapy to follow-up (44).

Two studies on the association between quality of marital adjustment and treatment outcomes also suggest the moderating impact of interpersonal difficulty. These studies found that poor pretreatment marital adjustment, or dyadic discord, was associated with negative therapy outcomes, lower rates of depression remission, or risk for increased depressive symptoms at follow-up in CBT, IPT, and the cognitive-behavioral analysis system of psychotherapy (45, 46). However, another study found no association between interpersonal problems or marital adjustment and depression (33).

Mixed findings exist for the relationship between changes in interpersonal functioning and treatment outcome. Improvement in the capacity to sustain interpersonal relationships over the course of psychotherapy was positively associated with symptom reduction in two studies of IPT and CBT (46, 47). In contrast, another study found that improvement in depression was associated with reduced relationship adjustment (32). The authors of that study offered two explanations for this finding. First, as depression subsides, improved interpersonal and cognitive functioning may reveal conflict in relationships that contributed to depression. Second, as seen through the lens of family systems theory, abrupt symptom improvement may disrupt existing family systems and create new conflict in relationships.

Interpersonal style. Some interpersonal styles affect the capacity to maintain functional relationships and influence treatment outcomes in patients who have depression. In a study that used the Inventory of Interpersonal Problems–Short Form (IIP-32), high baseline agency, indicating dominant (vs. submissive) social behavior, and high scores on amplitude, indicating a rigid interpersonal style, were associated with less change in depression severity and poor outcomes in response to CBT and IPT (48). Similarly, in a study comparing CBT to exposure-based CBT for depression, increases in a significant other's experience of the patient's agency as measured by the Impact Message Inventory (IMI) were associated with lower levels of depression at 3-month post-treatment follow-up but not at termination of therapy (44). None of the other dimensions measured by the IMI or IIP-32 had significant effects on depression. In another study, elevated IIP-Circumplex interpersonal distress scores were related to higher levels of depressive symptoms throughout a course of cognitive therapy. Contrary to the above findings, patients with high baseline agency had lower symptom scores in the middle of treatment and slightly lower symptom scores at the end of treatment, although the effect size was small (43). It is possible that the effect of interpersonal style on outcome is mediated by the therapeutic alliance. For instance, high baseline agency was negatively related to therapeutic alliance, while baseline communion (cooperation and caring) was positively related to alliance after controlling for depression severity, although these effects were also small (43). Interestingly, while overall, external locus of control was negatively related to treatment response in CBT, one particular aspect of this construct, externalizing blame for stressful events, was related to greater symptom improvement posttreatment (49), which we propose may have been related to the negative impact of internalizing problems by individuals with depression.

Capacity to Achieve Intimacy

Beyond the ability to engage with others and maintain relative harmony in relationships, this theme reflects the ability to form rich, meaningful relationships. Intimacy requires a willingness to depend on and be vulnerable with others while recognizing one's separateness and tolerating the anxiety of potential rejection or abandonment. The primary categories of predictor variables comprising this theme are attachment security, reliance on others, and quality of object relations. Findings on this theme often link the patient's capacity to achieve intimacy in extratherapeutic relationships to their capacity to have an effective relationship with the therapist.

Attachment security. A variety of empirical findings suggest a relationship between a patient's attachment style and treatment outcome for depression. In general, securely attached patients appear to benefit more from psychotherapy than insecurely attached patients (26). Attachment anxiety and attachment avoidance reflect two manifestations of attachment insecurity. Attachment anxiety relates to chronic fears of interpersonal rejection or abandonment leading to persistent demands for reassurance of others' availability (50). Attachment avoidance represents a discomfort tolerating closeness and active withdrawal in response to attachment threat. Attachment avoidance is further divided into two categories: dismissing avoidant, where the self is viewed positively but others are viewed as unreliable and rejecting (causing difficulties with trust and defensive independence), and fearful avoidant, where the self is perceived as unlovable and others as rejecting and unreliable (resulting in a desire for close relationships but mistrust of others and fear of rejection and abandonment) (51).

In a study of cognitive therapy for depression, securely attached patients reported significantly lower depressive symptoms posttreatment and represented the greatest proportion of patients demonstrating clinically significant and reliable change (93.3%) compared with avoidant (52.5%) and ambivalently (38.5%) attached patients (52). In a study of supportive-expressive psychodynamic therapy for

depression, overall treatment response was negatively associated with fearful avoidant attachment ratings, and patients who had achieved remission from depression reported significantly lower levels of fearful avoidant (and preoccupied) attachment (53). Additionally, response early in treatment was negatively correlated with fearful avoidant attachment, whereas response late in treatment was not. The authors note that patients with a fearful avoidant attachment style may struggle with trust and self-disclosure in ways that interfere with rapport and shared goals early in treatment. Additionally, neither treatment response nor symptom remission were predicted by dismissive avoidant attachment, which was unexpected because a dismissive avoidant attachment style is often associated with disinterest in bonding with the therapist, which can hinder alliance and treatment response. A trend toward the expected direction between dismissive attachment and treatment response late in therapy was found. The relationship between fearful avoidant attachment and depression remission was replicated among patients receiving IPT (33); those with lower baseline fearful avoidant attachment were more likely to meet criteria for achieving remission. Similarly, among women with recurrent depression that remitted following IPT, those with greater fearful avoidant attachment experienced slower clinical stabilization, and a trend toward shorter time to stabilization was observed among those high in secure attachment (54). However, this study found that attachment style did not distinguish between patients who did or did not achieve remission. In contrast, a posttreatment decrease in attachment avoidance from baseline was associated with a trend toward poorer outcomes following IPT (32). It is not clear whether improvement in attachment insecurity is an artifact of the improvement in depressive functioning or whether the improvement reflects change in attachment security independent of depressive symptomatology.

The relationship between attachment and outcome also may be moderated by treatment approach. Data from the National Institutes of Health Treatment of Depression Collaborative Research Program (TDCRP) showed that patients with higher scores for avoidant personality disorder responded more favorably to cognitive therapy than to IPT (40). In a randomized controlled trial of IPT versus CBT, patients with greater attachment avoidance showed greater reductions in depression severity and greater likelihood of symptom remission with CBT compared with IPT (55). An attempt to replicate this study was not successful, however, and CBT and IPT were found to be equally effective regardless of the patient's attachment style (56). Higher attachment avoidance was associated at trend level with greater self-reported and clinician-rated depression at termination of therapy, and higher attachment anxiety was associated with lower clinician-rated, but not self-reported, depression at termination.

Reliance on others. Other specific factors that contribute to intimacy and appear related to attachment include comfort with dependency, the ability to seek support from others during times of stress and to confide in others. In a study of patients seen at a university clinic, level of comfort with closeness and with dependence on others was associated with posttreatment depression outcomes (57). Similarly, individuals treated with CBT who frequently used social support (e.g., discuss their feelings with others) to cope with their emotional experiences of stressful events were more likely to report lower depression posttreatment (49). Having close friends who act as confidants was associated with lower depression symptoms at the 6-month post-treatment follow-up for both IPT and CBT for depression (as was medication) (58). In a study of chronic depression and predictors of long-term nonremission in response to a variety of unspecified psychological treatments, patients who did not socialize with friends and coped with stressors by avoiding social support, were more likely to endorse greater depressive symptoms posttreatment. Additionally, at 1- and 4-year posttreatment follow-ups, avoidance of people, having fewer friends, and less support from a confidant and/or other friends were all associated with more severe depression and/or hospitalization for depression (29).

Relatedly, data from the TDCRP showed that patients with high levels of perfectionism who tended to avoid intimacy and self-disclosure because of fear of criticism reported less satisfaction with various aspects of their social networks, which in turn, predicted worse treatment outcomes (59). Similarly, a comparatively small study (N=24) (60) found that patients treated with cognitive therapy who had an underinvolved interpersonal style (avoidance of relationships and difficulty experiencing love for another), showed less symptom improvement posttreatment. An overinvolved interpersonal style (highly influenced by others or sensitive to rejection) was associated with higher depression posttreatment.

Quality of object relatedness. Research on the construct of "quality of object relations" (QOR) has attempted to identify "a person's internal enduring tendency to establish certain types of relationships that range along an overall dimension from immature to mature" as predictive of therapy outcomes (61). Those with more immature object relations tend to develop relationships characterized by emotional intensity, instability, and destructiveness, while those with more mature object relations establish relationships characterized by love, tenderness, and concern (62). In one study, overall scores on "maturity of object relations" as measured by the developmental profile did not predict outcome, but the patient's ability to take responsibility for personal choices, consider both existing possibilities and the interests of others, and establish mature relationships without losing one's own personality was significantly associated with positive outcomes in short-term supportive psychodynamic therapy (63).

In another study, reduction in negative representations (antagonistic relationships, lack of respect for one's own and others' autonomy, and/or negative feelings) predicted lower depression scores across treatment conditions (supportive

expressive therapy [SET], medication, placebo) and greater improvement in positive representations (affiliation, respect for one's own and another's autonomy, and/or positive feelings) predicted greater symptom reduction in SET than placebo but not in the medication vs. placebo condition (64).

A growing literature suggests that a patient's QOR, as assessed by the Quality of Object Relations Scale, could inform the practitioner's choice of which type of therapy or therapeutic techniques to use. Higher scores indicate evidence of at least one stable and mutual relationship in the patient's history. Lower scores indicate less-gratifying relationships characterized by instability, less emotional investment, and need for dependency or overcontrol (65).

One study found that individuals with lower QOR benefited more when therapy interventions were less focused on prior psychodynamic formulations, suggesting that a more flexible approach allows individuals with less mature QOR to develop greater trust and comfort in therapy, thereby resulting in better treatment outcomes (66). In a comparison of interpretive versus supportive psychodynamic therapy with outpatients presenting with a mix of issues (the most common being major depressive disorder), QOR was significantly associated with outcome in interpretive psychodynamic therapy but showed no relationship to outcome in supportive psychodynamic therapy (67). For interpretive psychodynamic therapy, higher QOR was associated with improved outcomes in depression among major areas of life functioning, such as interpersonal distress and sexual functioning. Interpretive therapies may be more demanding of patients and require more mature relational functioning to tolerate the intensity of the work. In contrast, supportive therapies may require less interpersonal skill and capacity to tolerate interpersonal tension.

In a follow-up study of interpretive psychodynamic therapy (62), the relationship between therapeutic alliance and therapy outcome was moderated by QOR. For those with high QOR, greater therapeutic alliance was significantly related to positive outcomes, while those with low QOR had more-positive treatment outcomes when alliance decreased. The authors explain this counterintuitive finding by noting that interpretive psychotherapy often evokes a climate of uncertainty that promotes regressive processes and transference reactions. Through transference, patients with low QOR may experience the therapist as critical or threatening, resulting in lower alliance ratings. However, working through these issues in therapy results in more-positive treatment outcomes. In contrast, for patients receiving supportive psychodynamic therapy, QOR did not emerge as a moderator. While these findings point to potentially important relationships between QOR, alliance, and outcome, they should be interpreted with caution. The data were not collected with the intent of examining these relationships; the rater reliability of the QOR, while satisfactory, was not as high as in other studies; and the statistical analyses were not adjusted for the multiple comparisons conducted, which may render the interactions insignificant.

In two other studies, the impact of transference interpretations had a positive effect on outcome in psychotherapy for patients with low QOR (65, 68). These findings suggest that patients who have struggled to form meaningful and productive connections with others may benefit from addressing difficulties that arise in the therapy relationship. Results from the First Experimental Study of Transference (FEST) work show that patients with low QOR and/or symptoms of personality disorder (i.e., interpersonal difficulties) experienced the most improvement, in multiple areas of functioning, from the use of transference interpretations. Insight was a mediator of the relationship between transference work and treatment outcome, suggesting that improved insight helped patients to better understand their relationship difficulties, which improved their interpersonal functioning (69). These findings suggest that the use of transference interpretations may be critical to navigating interpersonal difficulties that arise in treatment. It should be noted that the findings reported in two of these studies (65, 68) were from a sample of outpatients that included patients presenting with depression, and the diagnoses were based on clinical history rather than structured clinical interview. The primary outcome measure was the psychodynamic functioning scale rather than an established measure of depression. These limitations indicate the need for additional research to address these methodological limitations.

DISCUSSION AND CONCLUSIONS

Overall, our review of the literature points to the various ways interpersonal problems relate to psychotherapy outcomes for patients with depression, which we have grouped into three themes: capacity to engage with others, capacity to navigate relationships, and capacity to achieve intimacy. Difficulty in any of these areas frequently results in worse therapeutic outcomes, although the effect may vary by type of treatment and patient and mixed findings exist.

Many of the studies reviewed did not frame the variables studied according to the themes and categories we describe. Findings in a number of the studies were related to interpersonal variables, and the impact of these variables on treatment outcomes was ancillary to the primary goals of the study. However, our framework for understanding extratherapeutic interpersonal problems may be useful for prediction of prognosis, identification and development of methods targeting interpersonal problems associated with therapy outcomes, and identification of variables that are most reliably predictive of outcome for future research. On the basis of the findings presented here, specific interpersonal variables, such as interpersonal distress and style, attachment orientation, and QOR appear to be particularly useful in predicting treatment outcomes, whereas access to social support and marital status provided more mixed results, likely because these measures fail to account for the quality of these relationships. For instance, an emotionally supportive extratherapeutic friendship or marriage may

facilitate therapeutic work and provide an atmosphere that fosters personal growth, whereas a tumultuous extratherapeutic relationship can keep people stuck in negative interpersonal patterns that maintain depressive symptoms and may make it difficult to sustain any gains made in treatment in the long term. Measures of dyadic adjustment, interpersonal style, attachment security, and QOR assess relationship quality in a way that tells us more about patients' interpersonal strengths and deficits as they may relate to treatment outcome.

The ways that interpersonal factors, depression severity, and treatment outcomes are measured also has bearing on understanding how these constructs relate to each other. There was variability in the measures used within the categories explored, which may have contributed to the mixed findings. For instance, the eight studies reviewed in the attachment security category (32, 33, 40, 52–56) relied on five different attachment measures with different levels of reliability, and each study attempted to address issues of reliability in different ways (70–72). Findings between these studies differed by attachment measure, underscoring the importance of how these variables are operationalized.

The studies in this review that examined differences between therapeutic approaches suggest that these variables may in future research contribute to answering the question, what works for whom? For instance, two studies found that patients with difficulty tolerating closeness (attachment avoidance) responded better to cognitive therapy and CBT than to IPT (40, 55). Additionally, a series of studies examining QOR in psychodynamic treatments suggest that those with low QOR benefitted from longer treatment, a more flexible approach, and transference interpretations, while those with high QOR benefitted most from interpretative therapy (65, 66, 68). As most of these findings have not been replicated, additional work is necessary before guidelines for treatment matching can be developed. The findings of two studies reviewed (52, 60) suggest that attachment may function as a moderator of the effect of treatment approach on the outcome of psychotherapy and that this relationship may be mediated by therapeutic alliance. Investigating the impact of specific interpersonal factors on the therapeutic alliance may provide additional insight into how patient extratherapeutic interpersonal factors affect treatment outcomes.

Treatments that target interpersonal factors could have an impact on depression outcome at each level discussed in this review, represented by the three identified themes. For instance, to foster engagement with others, therapy could help individuals who withdraw from relationships when faced with stressors to target these stressors and to use alternative strategies to manage stress that incorporate social connection (e.g., behavioral activation focused on social activity, support, or stress-management groups). A variety of available therapeutic interventions may be used to facilitate and develop patients' capacity for navigating relationships with others. For some patients, rudimentary remediation of social skills may be a necessary first step in the process. For others, assessment of the contexts in which otherwise skillful behavior breaks down may help identify vulnerabilities that repeatedly haunt patients from one relationship to the next. Finally, various therapies exist for helping patients achieve intimacy in close relationships. Many of these therapies help patients to tolerate previously intolerable feelings (e.g., dependency, vulnerability, fears of engulfment). This process has been variously conceptualized as exposure, challenging assumptions, safe surprises, and the internalization of new ways of relating (73–76). These frameworks all emphasize the importance of slowly expanding the patient's capacity for closeness, often using the therapeutic relationship to facilitate this process.

The literature paints a compelling picture of the importance of interpersonal variables to understanding differences in psychotherapy outcomes for patients with depression. However, because studies with null findings are often not published, the literature reviewed here may overstate the relationship between interpersonal variables and depression outcomes. As previously mentioned, the primary aim of many of the studies reviewed was not to assess interpersonal predictors of treatment response. Future studies, specifically designed to address this question, may use methodologies better suited to evaluate the influence of interpersonal factors on treatment outcome. Greater standardization of variables would allow for a clearer body of literature to inform predictors of treatment outcome and guide treatment choice.

Throughout the studies reviewed, it was assumed that fewer depressive symptoms corresponded to better psychosocial functioning. However, symptom reduction does not always correspond to better functioning. An increase in symptoms may reflect deeper insight into patients' struggles, signaling an improvement in their psychological functioning not captured by symptom measures. Hence, the meaning of the findings may vary by individual. Measures of psychological functioning that do not rely on self-report, such as collateral reports and observational psychophysiological methods, may increase understanding of the interplay between patient perception, physiology, behavior, and interpersonal context. For example, observational methods may provide insight into whether and how intertherapy experiences may translate into the patient's life. Physiological measures taken during interpersonal interactions shed light on variability in reactivity or arousal in various situations (77–81). It is also possible that changes in physiological reactivity in response to particular interpersonal scenarios may mediate treatment response.

The three interpersonal themes associated with psychotherapy treatment response described here serve as a useful heuristic for organizing patient interpersonal data; however, the artificial separation of these categories belies the interrelatedness of these constructs. Patients who struggle to engage with others are more likely to have had negative relationship experiences that form the basis for their expectations and potentially reduce the presence of relationships because of diminished interest in seeking them out.

Similarly, patients who are less inclined to desire relationships, perhaps because of a greater sensitivity to the fears evoked by closeness, may also have less practice with the skills necessary to navigate relationship conflicts. The specific nature of how these factors interact and inform clinical interventions remains unknown and is worth exploring in future research. Ultimately, understanding how interpersonal variables operate in the patient's life can lead to more-effective and targeted treatment approaches.

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