

Impact of Exchanges and Client–Therapist Alliance in Online-Text Psychotherapy

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Abstract

The impact of exchanges and client–therapist alliance of online therapy text exchanges were compared to previously published results in face-to-face therapy, and the moderating effects of four participant factors found significant in previously published face-to-face studies were investigated using statistical mixed-effect modeling analytic techniques. Therapists ($N=30$) and clients ($N=30$) engaged in online therapy were recruited from private practitioner sites, e-clinics, online counseling centers, and mental-health-related discussion boards. In a naturalistic design, they each visited an online site weekly and completed the standard impact and alliance questionnaires for at least 6 weeks. Results indicated that the impact of exchanges and client–therapist alliance in text therapy was similar to, but in some respects more positive than, previous evaluations of face-to-face therapy. The significance of participant factors previously found to influence impact and alliance in face-to-face therapy (client symptom severity, social support, therapist theoretical orientation, and therapist experience) was not replicated, except that therapists with the more symptomatic clients rated their text exchanges as less smooth and comfortable. Although its small size and naturalistic design impose limitations on sensitivity and generalizability, this study provides some insights into treatment impact and the alliance in online therapy.

Introduction

CURRENTLY, THE MOST common modality for online therapy is text-based e-mail.¹ E-mail is asynchronous, meaning that participants typically respond to one another when they have time, whereas they respond immediately in synchronous text chat. Online text therapy would be expected to be less stimulus-rich than conventional face-to-face therapy (i.e., to lack the nonverbal cues), but it need not lead to a lesser quality interaction.² Anecdotal reports have suggested that clients and therapists perceive text therapy similar to traditional therapy. For example, Fenichel and his colleagues,^{3(p26)} after reading the unedited transcript of a text chat session, remarked on the “similarity between a text-based transcript and a comparable office session,” noting “the expressiveness and depth of the text-based communication.”

This study addressed the need to examine processes in online therapy,⁴ focusing on session impact and alliance in two text-based modalities: e-mail and text chat. Session impact encompasses participants’ evaluations of their session and postsession affective state.^{5,6} The alliance is widely regarded as a vehicle for conveying therapy’s active ingredients and perhaps a key active ingredient itself.^{7,8}

Among the few differences previously observed in the evaluations of online and face-to-face therapy, online clients experienced their session as less Arousing when compared to their face-to-face counterparts. Reynolds and Stiles⁹ found that face-to-face therapists who used an online form reported their present mood as less Aroused than those in previous studies who used paper-and-pencil forms, suggesting that form-completion factors may contribute to the effect. Online clients have reported higher alliance in some studies¹⁰ and lower alliance in other studies¹¹ when compared to their face-to-face clients.

Research Questions and Design

This study had two foci. First, if text therapy delivered online is to be effective, then clients and therapists should perceive impacts and alliances similarly to their face-to-face counterparts. As one exception, we expected to find lower postsession Arousal among online therapy participants, reflecting their experiencing the online environment as more comfortable and less threatening than the face-to-face milieu.^{9,12} Preliminary analyses based on a partial sample was consistent with these expectations.¹³ To assess

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these expectations, we compared the impact of the exchanges and the participants' alliance. We also extended previous descriptive investigations, which have used cross-sectional designs,¹⁰⁻¹² by examining online processes longitudinally.

Second, if online text therapy is comparable, then online clients and therapists should be moderated by participant factors in similar ways to face-to-face therapy. Our search of the face-to-face therapy literature identified four participant factors (personal or contextual characteristics) that could potentially influence text therapists' and text clients' impact and alliance ratings: therapists' theoretical orientation,^{14,15} therapists' experience,^{16,17} clients' symptom severity,¹⁸ and clients' social support.¹⁹ Based on these reports, we expected that therapists of more symptomatic clients would report lower *Smoothness* during their exchanges¹⁸; more-experienced therapist would report higher *Partnership*²⁰; less-experienced therapists would evaluate their exchanges as *Deeper*¹⁶; and clients with more social support would report higher overall alliance ratings.²¹

Method

Participants

Participants were 30 therapists and 30 clients engaged in online therapy. Therapists each saw either 1 or 2 clients (*mode* = 1 client) for a total of 394 therapist-rated weeks of exchanges. Clients (*N* = 30) contributed a total of 475 client-rated weeks of exchanges. A subset of participants included both members of the therapeutic dyad: 10 online therapists and 13 clients; the other 20 therapists and 17 clients participated alone.

The therapists were women (70 percent), Caucasian (90 percent), aged 28–62 years (*Mdn* = 48), and 67 percent were married/partnered. They used either e-mail (*n* = 17 therapists) or text chat (*n* = 10 therapists), were predominately licensed in the United States (*n* = 20 therapists), and a plurality worked from a cognitive/behavioral perspective (33 percent).

The 30 clients' ages ranged from 19 to 55 (*Mdn* = 43) with 83 percent women, 73 percent Caucasian, and 40 percent married/partnered. Their most common self-reported presenting problems were depression (12 clients) and anxiety (5). Of the six clients reporting more than one presenting problem, five endorsed depression and some other psychological issue.

Measures

Demographic questionnaire. The demographic questionnaire requested information on the respondent's e-mail address, date of birth, marital status, gender, ethnicity, highest year of education, and either client's presenting problem or therapist's full name, geographical location licensed to practice face-to-face psychotherapy, and theoretical orientation.

Session Evaluation Questionnaire (SEQ). The SEQ (Form 5²²), which assesses session impact, consists of 21 seven-point bipolar adjective items with the first 11 session evaluation items (five Depth subscale items and five Smoothness subscale items) and the second 10 postsession mood items (five Positivity subscale items and five Arousal subscale items).

Agnew relationship measure (ARM-12). The ARM-12, which assesses alliance, is a 12-item short form^{23,24} of the 28-item ARM.²⁵ It includes four subscales: *Bond*, *Partnership*, *Confidence*, and *Openness*.

The social support questionnaire. The social support questionnaire (SSQ) version was a 12-item short form²⁶ of the 27-item SSQ²⁷ that includes two factor analytically derived subscales: Availability (SSQN) and Satisfaction (SSQS).

The Global Assessment Scale (GAS). The GAS²⁸ was used by therapists to evaluate their clients' overall level of functioning with a clinical description that includes the level of occupational and social functioning, as well as subjective distress.

Procedure

Participants were recruited online from private practitioner sites, e-clinics, online counseling centers, and mental-health-related discussion boards. Interested therapists had the option to invite current clients to take part. However, either the therapists or the clients could participate alone. Data collection ended when participants visited enough times to provide the minimum of 6 weeks each of session impact and alliance data. Clients completed many fewer forms compared to their therapists, with one-half (*n* = 28) of the total dyads (*n* = 59 with client reporting alone, therapist reporting alone, or both client and therapist reporting) represented by only the therapist reporting.

On their initial visit to the study's online site, participants completed a consent form and the demographic forms. They could then choose to enter their weekly data immediately or logout to complete their ratings later.

A weekly reminder e-mail encouraging completion of the questionnaires as soon as possible was sent to participants who had yet to finish the forms for the previous week. When they logged in, participants were presented with links for the prior 2 weeks. For a completed week, participants entered either the number of weekly text-chat exchanges or the number of e-mails that they sent and received and completed the ARM and SEQ. Upon study completion, the therapists replied to an e-mail, requesting evaluations of their clients' symptom severity (GAS), and the clients replied to an e-mail requesting their occupation and social support (SSQ).

Data analysis strategy

To assess the similarity of online process with face-to-face process, we compared the distributions of online therapy scale scores with distributions of face-to-face therapy values obtained in previously published studies. This comparison represents an aggregate benchmarking strategy used previously in psychotherapy outcome studies.^{29,30} At its simplest, benchmarking refers to "the establishment of reference points that can be used to interpret data" being mindful of comparing similar sets of information.^{30(p143)}

To assess the influence of the participant factors, we employed linear mixed-modeling analytic techniques.³¹ Following Littell et al.,³¹ the general form of this model for therapist and client responses is shown in Table 1. The use of a mixed-effect modeling strategy has the advantages of accommodating correlation of multiple measurements,

TABLE 1. THERAPIST AND CLIENT LINEAR MIXED-EFFECT MODELS

Therapist

$$Y_{jt} = (\beta_0 + b_0) + \alpha_2 \text{ECLECTIC} + \alpha_3 \text{COGNITIVE} + \alpha_4 \text{SYMPTOMSEVERITY} + \alpha_5 \text{F2FEXPERIENCE} + \alpha_6 \text{ONLINEEXPERIENCE} + (\beta_1 + b_1) \times t + \gamma_2 \text{ECLECTIC} \times t + \gamma_3 \text{COGNITIVE} \times t + \gamma_4 \text{SYMPTOMSEVERITY} \times t + \gamma_5 \text{F2FEXPERIENCE} \times t + \gamma_6 \text{ONLINEEXPERIENCE} \times t + \varepsilon_{jt}$$

Client

$$Y_{jt} = (\beta_2 + b_2) + \alpha_7 \text{SOCIALSUPPORT} + (\beta_3 + b_3) \times t + \gamma_7 \text{SOCIALSUPPORT} \times t + \varepsilon_{jt}$$

Y_{jt} = rating (predicted session impact or therapeutic alliance) of the j th therapist at time t (in the first model) or the j th client at time t (in the second model); t = time of therapeutic exchange (measured as days since start of therapy); ECLECTIC = 1 if therapeutic orientation is eclectic/integrative and 0 otherwise; COGNITIVE = 1 if therapeutic orientation is cognitive/behavioral and 0 otherwise; SYMPTOMSEVERITY = therapist-rated client symptom severity (1 to 100); F2FEXPERIENCE = therapist face-to-face therapy experience (years); ONLINEEXPERIENCE = therapist online therapy experience (years); and SOCIALSUPPORT = client social support (0 to 9).

Predictors for average therapist ratings included baseline levels of the therapist-rated client symptom severity (GAS), and three additional therapist-rated variables: therapist orientation, which was dummy-coded into the three levels of cognitive/behavioral, eclectic/integrative, and other (i.e., Humanistic, Interpersonal, Psychoanalytic/Psychodynamic, Family Systems, and Transpersonal), therapist face-to-face therapy experience, and therapist online therapy experience. Predictors for average client ratings included baseline levels of client-rated social support (SSQN).

The α , β , and γ terms correspond to fixed effects (i.e., familiar regression coefficients), and the b terms and ε_{jt} are the random effects. β_0 and β_2 are the population intercepts, and β_1 and β_3 are the population slopes. Other model terms reflect the influence of a factor on the average response ($\alpha_2 - \alpha_7$) or on the trajectory of the response ($\gamma_2 - \gamma_7$). In contrast, b_0 and b_2 are the participant-specific intercepts for an individual client or therapist, and b_1 and b_3 are the participant-specific slopes for an individual client or therapist. We assumed that the vector of random effects (b_0, b_1) is bivariate normal with a zero mean vector and variance components $\sigma_0^2 = \text{Var}(b_0)$, $\sigma_1^2 = \text{Var}(b_1)$, and $\sigma_{01} = \text{Cov}(b_0, b_1)$.

We also assumed that (b_2, b_3) are similarly defined. Last, we assumed that the missing data were not systematically related to session impact or alliance levels.

estimating population relationship and participant-specific trajectories, and describing psychotherapy as a linear trend.³² Separate analyses were performed on therapists' ratings and clients' ratings for each of the four impact and alliance subscales.

Results

Comparing online session impact and alliance averages with face-to-face averages

Table 2 compares the online therapists' and clients' means for the SEQ and ARM indexes with the same measures as completed by face-to-face therapists and clients in previous published studies. Text therapist SEQ scores were greater than those of face-to-face therapists, with the notable exception of Arousal scores. Similarly, text clients' SEQ scores were comparable to or greater than those of their face-to-face counterparts (see Table 2). Therapists' and clients' mean online ARM scores were also generally comparable to or numerically greater than the corresponding face-to-face study mean scores. However, clients' Openness on the ARM was numerically below the lower end of the range (see Table 2). Insofar, as relatively few face-to-face studies involving the ARM were available for comparison, the potential range of the ARM subscales is probably understated in the corresponding face-to-face studies.

Participant form completion latency

While participants in the face-to-face studies always completed the paper-and-pencil forms immediately after their sessions (e.g., Stiles and Snow^{33(p6)}), some participants in the current study completed their online forms up to 2 weeks after their online exchanges. However, comparisons between forms completed early (within 2 days after a session) and late (more than 2 days after a session) provided no evidence that the participants' delay led to systematically higher or lower scores on our measures.

Population-level participants' intercepts and trajectories

Using the obtained scores and the reported session dates, we estimated an intercept score for each participant on each scale at their reported treatment start date. These intercepts for therapist and client ratings on session impact and alliance subscales averaged near, but mostly above, the midpoint of each subscale (see Table 3). Average therapists' and clients' slope or rates of change per day ranged from -0.0004 to 0.0010 units of session impact/alliance per day, with none significantly increasing or decreasing.

Random effects on participants' intercepts and trajectories

Sources of variation in participants' intercepts and slopes were estimated using random effects that are conceptually related to variance components. These random effects provide an index of the amount of variation attributable to (a) differences among therapists, (b) differences among clients of each therapist, and (c) remaining variation.

Random effects analyses (Table 3) showed a client effect on therapists' estimated SEQ and ARM intercepts, indicating that therapists saw systematic differences among their clients with respect to these process qualities. For therapists' SEQ and ARM subscales examined at the client-within-therapist level, estimated intercepts ranged from 0.0784 ($p < 0.01$; Arousal) to 0.5376 ($p < 0.03$; Smoothness) and accounted for a significant 14.01 percent to 45.50 percent of therapists' total rating variation on SEQ and ARM subscales (see Table 3).

In contrast, random effects analyses determined that therapists' estimated SEQ and ARM intercepts did not evidence a therapist effect. That is, therapists judged their own levels of these qualities similarly to each other.

Random effects analyses showed client effects on most of the clients' estimated SEQ and ARM intercepts, indicating significant variation among clients' self-reports on these

TABLE 2. THERAPISTS' AND CLIENTS' MEANS, STANDARD DEVIATIONS, INTERNAL CONSISTENCY RELIABILITIES (COEFFICIENT ALPHA), AND PREVIOUS STUDIES' RANGE OF MEANS AND STANDARD DEVIATIONS FOR SESSION EVALUATION QUESTIONNAIRE (SEQ) INDEXES AND THE AGNEW RELATIONSHIP MEASURE (ARM-12) INDEXES

Index	No. items	Alpha	M	SD	Means of previous studies ^a		Standard deviations of previous studies ^a	
					Median	Range	Median	Range
Therapist								
SEQ								
Depth	5	0.88	5.31	0.96	4.80	4.25–5.10	1.01	0.41–1.08
Smoothness	5	0.92	5.09	1.36	4.20	3.86–4.52	1.03	0.56–1.20
Positivity	5	0.85	5.49	1.03	4.59	4.38–5.16	0.93	0.49–1.01
Arousal	5	0.45	4.05	0.75	4.43	4.18–4.58	0.96	0.80–1.05
ARM								
Bond	3	0.57	6.07	0.96	—	—	—	—
Partnership	3	0.51	5.88	1.07	—	—	—	—
Confidence	3	0.77	6.00	0.89	5.14	4.85–5.31	0.94	0.85–0.98
Openness	3	0.63	5.19	1.30	4.94	4.70–5.70	1.17	0.95–1.33
Bond/Part ^b	6	0.72	5.98	0.91	5.51	5.24–5.89	0.91	0.80–1.01
Overall	12	0.80	5.79	0.79	—	—	—	—
Client								
SEQ								
Depth	5	0.94	5.51	1.54	5.20	4.65–5.85	0.85	0.58–1.29
Smoothness	5	0.92	4.83	1.69	4.35	4.13–5.28	1.30	0.76–1.47
Positivity	5	0.92	5.03	1.72	4.62	4.38–4.88	0.86	0.70–1.44
Arousal	5	0.46	4.20	0.96	4.22	4.12–4.40	0.92	0.64–1.28
ARM								
Bond	3	0.86	6.28	1.22	—	—	—	—
Partnership	3	0.71	5.96	1.32	—	—	—	—
Confidence	3	0.83	6.43	1.01	5.86	5.74–6.29	0.95	0.85–0.98
Openness	3	0.64	5.26	1.55	5.49	5.39–5.75	1.24	1.05–1.39
Bond/Part ^b	6	0.86	6.12	1.17	6.01	5.88–6.43	0.94	0.79–0.98
Overall	12	0.86	5.98	1.00	—	—	—	—

N=394 weeks of exchanges for therapists and N=475 weeks of exchanges for clients. Indices were calculated as the mean of therapists' and clients' ratings on constituent items. SEQ and ARM items could range from 1 to 7. Alpha=internal consistency measured by the coefficient alpha.

^aThe means are from prior studies of the SEQ (Cummings et al.¹⁶; Dill-Standiford et al.⁴⁰; Kivlighan et al.⁴¹; Nocita and Stiles⁴²; Reynolds et al.⁴³; Stiles et al.⁶; Stiles et al.¹⁵; Stiles and Snow³³; Tryon⁴⁴) and ARM (Agnew-Davies et al.²⁵; Stiles et al.⁴⁵; Stiles et al.²⁴).

^bThe Bond and Partnership indexes were highly correlated with each other, so we combined them, yielding a single core alliance index (following Stiles et al.⁴⁵), which had a higher internal consistency reliability than either one alone.

subscales. For clients' SEQ and ARM subscales examined at the client-within-therapist level, estimated intercepts ranged from 0.0764 ($p=0.20$, Bond/Partnership) to 1.1667 ($p=0.02$; Openness) and accounted for a substantial 7.43 percent to 52.74 percent of the clients' total rating variation for a given SEQ or ARM subscale (see Table 3).

In contrast, random effects analyses failed to show therapist effects on most of the client-estimated SEQ and ARM intercepts.

According to the random effects analysis, none of the therapists' SEQ and ARM slopes for their clients evidenced a significant client effect. Further, random effects analyses determined that most of the therapists' SEQ and ARM slopes did not evidence a significant therapist effect. Similarly, there was no evidence of significant client slopes for either SEQ or ARM. Few of the clients' SEQ and ARM subscale slopes evidenced a therapist effect.

Participant factors influencing therapists' ratings

We used fixed effects analyses to examine whether therapists' average ratings of the qualities of their online text

exchanges and their therapeutic relationship with their clients were influenced by four participant factors.

Client symptom severity. Therapists with more symptomatic clients experienced their text exchanges as slightly, but significantly, less Smooth and Positive, estimated $\alpha_4=0.04$ ($t[387]=3.03$, $p<0.01$) and estimated $\alpha_4=0.02$ ($t[387]=2.23$, $p<0.05$), respectively, and their relationship as having slightly, but significantly, less Bond/Partnership, estimated $\alpha_4=0.02$ ($t[387]=2.45$, $p<0.05$).

Therapist theoretical orientation. Cognitive/Behavioral therapists (as opposed to "other" therapists) perceived their clients as having significantly more Confidence, estimated $\alpha_3=0.69$ ($t[387]=2.24$, $p<0.05$).

Participant factors influencing clients' ratings

In assessing the influence of participant factors on clients' ratings of session impact and therapeutic alliance, we considered clients' perceived social support.^{19,21,34} Clients with more perceived social supports evaluated their weekly text-

TABLE 3. RANDOM EFFECTS ON THERAPIST- AND CLIENT-ESTIMATED INTERCEPTS FOR SESSION IMPACT (SEQ) AND THERAPEUTIC ALLIANCE (ARM-12) EVALUATIONS OF THEIR TEXT EXCHANGES (FITTED LINEAR-MIXED MODEL)

Source of variation	Therapist estimated intercepts			Client estimated intercepts		
	Estimated variance component	SE	Z	Estimated variance component	SE	Z
SEQ						
<i>Depth</i>						
Therapists	0.0963	0.1123	0.86	0.3616	0.4182	0.86
Clients within Therapists	0.1756	0.0939	1.87**	0.3961	0.3239	1.22
Residual	0.5154	0.0391	13.17***	0.9464	0.0638	14.84***
<i>Smoothness</i>						
Therapists	0.0020	0.2843	0.01	0.2289	0.5411	0.42
Clients within Therapists	0.5376	0.2917	1.84**	0.7525	0.4963	1.52*
Residual	0.9544	0.0741	12.88***	1.3200	0.0888	14.87***
<i>Positivity</i>						
Therapists	0.0254	0.1348	0.19	0.0000	ns	ns
Clients within Therapists	0.2198	0.1139	1.93**	0.9596	0.3246	2.96***
Residual	0.4411	0.0339	13.03***	1.1800	0.0799	14.80***
<i>Arousal</i>						
Therapists	0.0000	ns	ns	0.0000	ns	ns
Clients within Therapists	0.0784	0.0320	2.45***	0.3363	0.1367	2.46***
Residual	0.4809	0.0362	13.28***	0.5822	0.0391	14.88***
ARM						
<i>Bond/Partnership</i>						
Therapists	0.0269	0.1379	0.19	0.2447	0.1821	1.34*
Clients within Therapists	0.3144	0.1403	2.24***	0.0764	0.0912	0.84
Residual	0.3497	0.0268	13.04***	0.7067	0.0476	14.85***
<i>Confidence</i>						
Therapists	0.1791	0.1142	1.57*	0.2121	0.2618	0.81
Clients within Therapists	0.1204	0.0643	1.87**	0.1881	0.1958	0.96
Residual	0.2514	0.0193	13.04***	0.6273	0.0423	14.84***
<i>Openness</i>						
Therapists	0.4624	0.3099	1.49*	0.0641	0.5123	0.13
Clients within Therapists	0.4773	0.2372	2.01**	1.1667	0.5881	1.98**
Residual	0.7631	0.0577	13.23***	0.9813	0.0672	14.60***
<i>Overall</i>						
Therapists	0.1436	0.1322	1.09	0.0000	ns	ns
Clients within Therapists	0.2178	0.0984	2.21***	0.2619	0.1010	2.59***
Residual	0.2075	0.0158	13.13***	0.4841	0.0327	14.81***

$N=394$ weeks of exchanges for therapists. $N=475$ weeks of exchanges for clients.

* $p \leq 0.10$. ** $p \leq 0.05$. *** $p \leq 0.01$.

based exchanges with their therapists as more comfortable and less distressing than did clients with less-perceived social supports (i.e., significantly more Smooth), $\alpha_7 = 0.2876$ ($t[472] = 2.28$, $p < 0.05$).

Discussion

Online clients and therapists rated their session impacts and alliances as equally strong or stronger than had previously clients in face-to-face therapy (see Table 2). We hasten to acknowledge that these comparisons were not based on random assignment, and there were many potentially confounding differences.

The previously observed online calming effect, manifested in the substantially lower Arousal ratings of online therapists and clients relative to their face-to-face counterparts, was replicated. First, therapists' Arousal responses were numeri-

cally lower, and clients' Arousal responses were in the lower range of previously published face-to-face study means (see Table 2). Second, therapists' estimated population-level Arousal intercepts were low, and clients' estimated population-level Arousal intercepts were especially low (see Table 3). Third, therapists' population-level Arousal slopes were negative, indicating that their Arousal tended to decrease across sessions. Nevertheless, given the low reliability of the Arousal subscale, readers are advised to consider the online calming hypothesis as very tentative.

Our study also replicated the widely reported finding that therapists who worked with less-symptomatic clients rated their respective online therapeutic exchanges as Smoother than did therapists who worked with more-symptomatic clients. With these findings in mind, we consider several possible explanations consistent with the emerging empirical literature.

Online calming hypothesis

The online calming hypothesis proposes that therapists and clients experience the online environment as more comfortable and less threatening than the face-to-face milieu.

An alternative explanation of online participants' lower Arousal ratings is the longer delay of reporting.⁹ Most of the previous face-to-face participants completed the SEQ immediately after their sessions (e.g., Stiles and Snow^{33(p6)} and Cummings et al.,^{16(p159)}), whereas most of our participants completed the measures much later. Conceivably, the activating influence of online participants' therapeutic encounter may have decreased with the greater time from their online exchanges. Consequently, participants who completed the forms later may have under-reported their postsession degree of Arousal. However, this possibility seems less likely, given that our mean comparisons between forms completed early and late provided no evidence that reporting delay influenced comparisons between our online study and previous face-to-face therapy studies.

Some of our clients anonymously stated that they were able to tolerate online therapy better than face-to-face therapy consistent with the interpretation that clients' experience a calming influence of the online environment.

Cohen and Kerr's¹² face-to-face clients completed paper-and-pencil measures and rated their mood "right now" as more Aroused than their online clients. Consequently, the lack of exposure to the online environment during either their therapy sessions or subsequent reporting may have accounted for their increased Arousal ratings. Similarly, the hypothesis accounts for Reynolds and Stiles'⁹ finding that face-to-face therapists who reported online within 2 hours of their sessions rated their mood "right now" as less Aroused than did face-to-face therapists who reported online more than 2 hours after their sessions. The exposure to the online environment during subsequent reporting may have accounted for their decreased Arousal ratings.

We suggest that online therapists could take advantage of the online calming effect by addressing client problems that are relatively accessible with lower emotional arousal.³⁵ If online therapy is experienced as more comfortable, it may offer a less threatening alternative to face-to-face psychotherapy, especially for those who wrestle with anxiety disorders such as social anxiety disorder.³⁶

Client social support and psychopathology

Therapists with relatively lower Smoothness and Positivity ratings worked with relatively more symptomatic clients. They may have experienced their online exchanges as more challenging, tense, and uncomfortable as a result of the difficulty in emotionally connecting and working together with their more symptomatic clients (e.g., Zuroff et al.³⁷). This finding is consistent with Jones and Markos'¹⁸ finding that a higher client pre-session distress was related to lower ratings of session Smoothness.

Further, clients who reported higher perceived social support rated their online therapeutic exchanges as more Smooth. Clients' increased social competencies may have been responsible for both cultivating the increased social support in their life and the more relaxed, pleasant, and comfortable exchanges with their therapists.^{34,38} Clients who perceive their exchanges as Smoother may be more likely to

continue in therapy and thus resolve their presenting complaints (cf. Samstag et al.³⁹). Our findings failed to replicate previous findings that clients with more perceived social support reported higher therapeutic alliance ratings.^{19,21,34} This finding seems inconsistent with our premise that clients with more social support had increased social competencies in their interactions with others. However, clients with more social support may have less-severe presenting problems that reduced their need to cultivate stronger relationships with their therapists. Unfortunately, limited statistical power precluded our ability to examine this interesting potential interaction effect.

Limitations and practice implications

The findings of this study are tentative given the limited number of participants, their narrow demographics, the limited number of therapist orientations represented, and the restricted presenting problem range of the clients. Further, we cannot rule out possible self-selection biases, because our participants volunteered to take part in this study. However, our results offer qualified encouragement for future therapists and clients who are considering using online therapy. Online therapy may not be a less-desirable alternative to face-to-face therapy, but holds promise as a legitimate manner of conducting psychotherapy.

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