Presence and the Bond Between Patients and their Psychotherapists in the Cognitive-Behavior Therapy of Panic Disorder with Agoraphobia Delivered in Videoconference.

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Abstract

Delivering psychotherapy in videoconference is becoming an empirically validated form of treatment for anxiety disorders. Psychologists and other psychotherapists remain reluctant towards the use of telepsychotherapy, usually based on the false impression that it will not be possible to create a strong bond between the patient and the therapist "when talking to a TV". The hypothesis of the current study is that presence will significantly predicts the strength of the therapeutic bond, even after controlling for baseline symptom's severity and immersive tendencies. Data were collected pre treatment and after the first, fifth and the last (12^{th}) session of a cognitive-behavior therapy for adults suffering from panic disorder with agoraphobia. The treatment was delivered entirely in videoconference, on an individual basis (i.e., point-to-point videoconferencing), using a 384 kps connection between three remote cities. Hierarchical regression analyses revealed that the feeling of presence experienced during the first therapy sessions significantly predicted the strength of the therapeutic bond during the first session, explaining 20% of variance over and above symptoms' severity and individual differences in immersive tendencies. The feeling of presence averaged over the entire therapy also significantly predicted the therapeutic bond averaged over the entire therapy ($p < .01$, R^2 change = .26). The role of presence in telepsychotherapy appears quite important, especially for the development of a strong therapeutic bond.

Keywords--- **Telepsychotherapy, therapeutic bond, panic disorder with agoraphobia, cognitive-behavior therapy.**

1. Introduction

Panic disorder with agoraphobia (PDA) is a highly prevalent mental disorder, with a one-year prevalence estimated at 2.7% and a lifetime prevalence of 4.7% [1, 2]. The main feature of panic disorder is the presence of recurrent and unexpected panic attacks [2]. It is associated with the catastrophic misinterpretation and avoidance of bodily sensations. One-third to one-half of those with panic disorder also suffer from agoraphobia, which is the avoidance of specific situations where panic attack could occur, such as driving, enclosed places, supermarkets, or shopping malls [2]. PDA affect mostly women, is chronic and interrupts an individual's normal functioning, resulting in reduced quality of life including financial trouble, family strain, and decreased social support [2,3]. There is a high incidence of suicide attempts among patients with PDA (up to 20%) [2,3]. The economic costs are also very important due to reduced productivity, lost workdays and elevated health care costs. It is therefore imperative that the medical and psychological communities focus on the delivery and compliance with effective treatment.

Recommended treatments for PDA involve medication, cognitive-behavioral therapy (CBT), or a combination of both. Effective medications include selective serotonin reuptake inhibitors (SSRI and SNRI), tricyclic antidepressants, benzodiazepines, and monoamine oxidase inhibitors [3,4,5]. Most studies show the rate of relapse following medication discontinuation to be high (between 35%-90%, depending on the medication). In addition, studies suggest that patients are often reluctant to begin medication treatment for PDA [6]. Non-pharmacologic treatments for PDA are based on a mixture of cognitive and behavioral techniques [3,5,7-14]. It is generally agreed that cognitive-behavior therapy (CBT) is the most effective psychotherapeutic treatment modality currently available [3,7,12].

CBT techniques allow the patient, with the psychotherapist's assistance, to identify and modify dysfunctional emotions, thought processes and avoidance behaviors. Treatment essentially involves cognitive restructuring and gradual and repeated exposure to the feared situations until they no longer associated with threat. For PDA, exposure implies direct and progressive exposure to places and situation that trigger agoraphobic responses (usually called *in vivo* exposure) and to interoceptive cues (i.e., bodily sensations). The latter involves having the patient perform such activities as hyperventilating or running in place in order to experience the same physical symptoms they feel when having a panic attack. Exposure allows the patients to realize the control they have over their symptoms and to develop new associations between the feared stimuli and safety [15]. It allows them to understand that what they fear (bodily sensations, places or situations) is not dangerous. Performance of these exercises takes place after the patient and therapist have established a trusting alliance and usually after cognitive restructuring has first been taught. This enables the patient to feel safe during the exposure and brings greater awareness of their dysfunctional cognitions.

Despite that CBT is a well validated and evidence-based treatment for PDA, it is still underused. Most people suffering from PDA do not receive empirically validated treatments [16]. For example, only 11% of anxiety patients received CBT [16] in the United States. The situation appears to be similar in other countries, such as in Canada (10%) [17] or in Great Britain (between 5% to 15%) [16]. Limited access to CBT therapist is especially difficult in rural areas, where the availability of psychotherapists trained in the application of empirically validated treatments is scarce. Geographical isolation may also impede access to psychological services for agoraphobics living far away from specialized hospitals and

clinics (difficulties in traveling long distances are, by definition, a problem for agoraphobics).

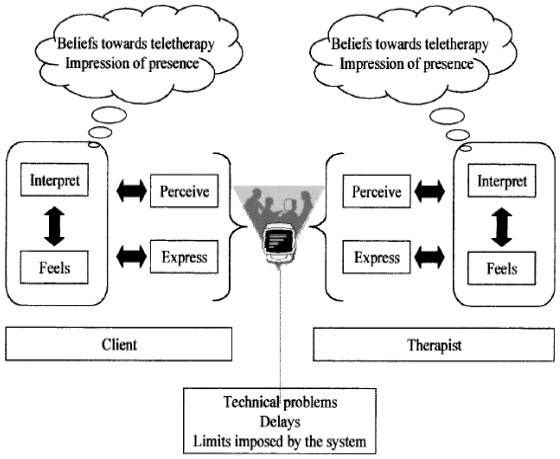
Delivering psychotherapy in videoconference, also called telepsychotherapy, offers a promising solution. Telepsychotherapy, or the use of information technology to provide remote mental health assessment, diagnosis, intervention, consultation, education, and information is an alternative to increase treatment accessibility. Receiving treatment by a psychotherapist from a remote location could be useful not only to patients in rural areas, but also to people in urban areas who prefer to receive their therapy from a therapist from another large city, or even from a therapist from a rural area.

Two studies have demonstrated the efficacy of delivering CBT in videoconference for patients suffering from PDA. In the first study [18], 21 adults suffering from PDA were treated either in face-to-face (n = 10, in the local site) or by videoconference (n = 11, in the remote site). Results showed that CBT delivered by videoconference was as effective as CBT delivered face-to-face. There was a statistically significant reduction in all measures. Up to 81% of the participants receiving CBT by videoconference were panic free at post-treatment, and 91% were panic-free at the 6-month follow-up. None of the effect-size comparisons between the two conditions suggested that telepsychotherapy was any less effective than face-to-face. In a replication study [19], 45 new patients suffering from PDA received 12 therapy sessions and were assessed at pre and post-treatment as well as at a 12-month follow-up. Repeated-measures ANOVAs and effect-sizes analyses confirmed that both treatments were effective and the difference between the two, if there is any, is trivial. In this study, the authors also assessed the therapeutic alliance and found it to be excellent in both conditions.

A strong therapeutic alliance, which represents the strength of the bond between the patient and the therapist, is considered by most therapists as a prerequisite for effective psychotherapy. As proposed by Bordin [20], the therapeutic alliance is composed of three factors: (a) agreement between the patient and the therapist on the global goal of the therapy, (b) agreement between the patient and the therapist on the specific tasks involved in therapy, and (c) the bond between the patient and the therapist. In CBT for PDA, all three factors play a significant role in the treatment, as agreement on tasks and goals are essentials to orient the treatment plan and remain focused during the course of treatment, and the therapeutic bond represents the basis for patients' necessary attachment to and trust towards the therapist upon which the patients will rely on to accept facing their fears. The therapeutic alliance has been found to correlated with treatment success [20], especially when measured early in therapy (i.e., after the first session and after the 3rd of the 5th sessions).

Agreeing on treatment goals and specific tasks should not be affected too much even if the therapy is delivered in videoconference. However, establishing and maintaining a strong therapeutic bond between the patient and the therapist may be more difficult in videoconference: the patient is not in the same room with the therapist (usually, they are not even be in the same city), it is impossible for the therapist to interact physically with the patient (e.g., shaking hands at the beginning of the session, offering a tissue when the patient is crying), there are small but noticeable delays in communications between the videoconference units, the patient is talking to a camera and listening to someone on television, it may be harder to communicate the necessary warmth and empathy, etc.

In 2000, Bouchard and his colleagues [21] proposed that several factors could facilitate the development of a therapeutic bond in videoconference, such as: (a) the individual abilities of the patient and the therapist to develop a therapeutic alliance, (b) the beliefs of patients and therapists towards telepsychotherapy and (c) the feeling of presence (see Figure 1). Following Bouchard et al.'s suggestion, the aim of this study is to assess the relationship between the feeling of presence and the therapeutic bond.



2. Method

2.1 Sample.

All participants are referred by mental health professionals working in mental health clinics. Upon referral, each participant receives the Structured Clinical Interview for DSM-IV (SCID) [22] to ascertain the presence of PDA and other mental disorders. The following exclusion criteria are fixed *a priori*: (a) principal diagnosis other than PDA; (b) self-report of less than 4 panic attacks in the month preceding the SCID; (c) duration of illness of less than 6 months; (d) diagnosis of bipolar disorder, schizophrenia or psychotic disorder, organic mental disorder, intellectual deficiency or severe personality disorders; (e) below 18 or above 65 years of age; (f) currently receiving other psychological treatment; (g) presence of a medical condition precluding participation in the treatment for methodological or clinical reasons (e.g., hypoglycemia, cardiovascular disease, Meuniere syndrome, asthma, history of seizures, hyper- or hypothyroidism); (h) if taking antidepressants, MAOIs, or SSRIs, then using them for

less than 6 months or, if taking benzodiazepines, using them for less than 3 months. Subjects on medication who corresponded to the selection criteria are included only if they agree not to change their medication and not to increase its dosage during the study.

The sample consists in 41 adults aged between 18 and 57 (mean = 35.46, sd = 10.92). Most of them are female (80.5%), moderately educated (college level), single (51%) and 52% are afflicted by at least one additional mental disorder (in decreasing order of prevalence: specific phobia, major depression, generalized anxiety disorder, social anxiety disorder, hypocondriasis). All received telepsychotherapy exclusively.

2.2 Instruments.

The alliance is measured with the *Working Alliance Inventory* [23], which is one of the most frequently used measure of alliance. The *WAI* was developed to be applied to psychotherapies delivered according to any psychotherapeutic orientation. It yields a total score based on the sum of the 35 items, as well as three subscores: agreement on in-sessions tasks, agreement on treatment goals, and the development of a therapeutic bond. The client's perception of the alliance is measured with the *WAI* after the first, the fifth and the last (12^{th}) therapy sessions. High scores represent a stronger alliance. Only the bond subscale (internal consistency = .85) is used in the analyses since it is the factor that is most likely to be affected by the use of telepsychotherapy.

The subjective feeling of presence in psychotherapy is measured with the *Telepresence in Videoconference Scale* [24]. This 8-item instrument is currently used by several research teams testing the efficacy of CBT delivered in videoconference. The validation study, conducted with 118 adults, revealed a Cronbach's alpha of .84 and three factors: physical presence (e.g., "I had the feeling I was in the same room as the other person"), social presence (e.g., "It seemed the person or party located at the other videoconference site and I were together and that feeling disappeared when the videoconference session ended") and absorption (e.g., "When the videoconference session ended, I felt like I was coming back to the real word"). Presence is measured after the first, the fifth and the last (12^{th}) therapy sessions. For the current study, we selected the physical presence subscale as the primary measure of presence because social presence might be biased by the quality of the therapeutic relationship (i.e., there may be a natural correlation between creating a strong bond with someone and feeling "connected" to that person). As for the absorption subscale, it was impossible to predict whether patients would loose track of physical space and time and if it would be related to the bond at all.

The *Panic and Agoraphobia Scale (PAS)* [25] is used to control for symptoms' severity. The PAS assesses the severity of PDA with 13 items grouped in five subscales: panic attacks (frequency, severity and duration), avoidance, anticipatory anxiety, disability (family, social, employment), and worries about health. The total score is obtained by summing each item scores. The PAS has a very good internal consistency (Cronbach's alpha = .88).

The *Immersive Tendencies Questionnaire* [26]. The ITQ is used in the current study to control for *a priori* patient's individual differences in their susceptibility to feel present. According to the original authors, only 18 items of version 3.01 are scored. The internal consistency of this instrument is strong (Cronbach's alpha = .81).

2.3 Equipment.

All videoconference sites are equipped with Tandberg 5000 videoconference systems. Images are displayed on a 32-inch television monitor in full-screen and users sit at about four feet away from the monitor and the cameras. Participants are alone in a psychologist's office at the remote mental health clinics. The local and two remote sites (each in a different city) are linked at 384 kps using a T1 line. This system allows the patients and the therapists to see each other from the waist up (when seated) and to talk with excellent image quality and without significant delays. The therapists are encouraged to use the picture-in-picture function so they could see what the participants were seeing (the patients did not used this feature). This visual feedback helps the therapists not to wave their hands outside the camera's field of view.

2.4 Treatment.

Cognitive-behavior therapy is delivered once a week for 12 consecutive weeks by trained therapists. All therapists have a minimum of one year of experience with the treatment protocol. The treatment is delivered according to a standardized and explicit treatment manual used in previous studies [8, 11, 13, 14, 15, 18]. The treatment protocol is structured along the following steps: brief individualized case conceptualization, presentation of the cognitive model of panic, application of cognitive-restructuring techniques to the interpretation of body sensations, interoceptive exposure, exposure to agoraphobic situations, and relapse prevention. The therapists provide the participants with written descriptions of key information. Participants are always alone with their therapist (i.e., no one else was with them in the room at the remote site during the therapy sessions). All therapy sessions are delivered exclusively in videoconference.

2.5 Overview of statistical analyses.

Descriptive analyses are reported first. To test our hypothesis, two hierarchical regression analyses are performed: (a) with the entire sample using data collected after the first therapy session; and (b) with the 26 participants who have completed the treatment so far and using bond and presence scores averaged over the entire therapy process (i.e., data collected the first, fifth and last therapy session are averaged to obtain mean scores of bond and presence). In the first analysis, the immersive tendency and severity of PDA represent the first set of predictors entered in a regression predicting the

therapeutic bond after the first therapy session. Then, the presence score after the first therapy session is added and the increase in variance is tested for significance. The second analysis follows exactly the same sequence, with the averaged presence score during therapy being used as a predictor and the averaged therapeutic bond score during therapy being used as the predicted variable.

3. Results

The first hierarchical regression confirms the importance of the feeling of presence on the strength of the therapeutic bond as early as the first therapy session. The initial regression model based on the control variables is not significant (see the Table 1 below), but the inclusion of the physical presence subscale is significant ($p < .05$). The final regression model is significant [$F_{(3, 39)} = 3.6$, $p < .05$]. The examination of the entire regression model (Table 2) shows that physical presence is the only significant contributing parameter ($p < .05$) and it shares 20% of unique variance with the bond between the patient and the therapist. Similar results are obtained when using the social presence subscale of the *Telepresence in Videoconference Scale* [$F_{change\ (1,36)} = 4.89$, $p < .05$, partial correlation = .34, $p < .05$]. The hierarchical regression using the absorption subscale is not significant [$F_{change\ (1,36)} = .11$, ns].

The second hierarchical regression also confirms the importance of the feeling of presence on the strength of the therapeutic bond, this time over the entire treatment process. The first regression model based on the control variables is not significant, but entering the physical presence subscale in the model adds a significant 26% of variance ($p < .05$) (see Table 3). The final regression model is significant [$F_{(3, 25)} = 3.18$, $p < .05$]. The examination of the entire regression model (Table 4) reveals that the unique correlation between presence and bond is high (.51) and the only significant ($p < .05$) parameter. Similar results are obtained when using the social presence subscale of the *Telepresence in Videoconference Scale* [$F_{(3, 25)} = 10.02$, $p < .05$, partial correlation = .34, $p < .05$], but not with the absorption subscale [$F_{(3, 25)} = .49$, ns].

Additional regression analyses are also conducted with the inclusion of other control variables in the first regression step, such as age, severity of depression, attitude towards communicating in videoconference, motivation toward therapy, etc. In every case, physical presence is significant and remains the strongest predictor of the therapeutic bond. However, these results are not reported here given the small sample size and low power of these analyses.

On a more descriptive note, the therapeutic bond and physical presence scores are strong after the first therapy session, (22.61, sd = 4.64) and (57.17, sd = 22.57) respectively. Both the therapeutic bond [$F_{(2, 52)} = 5.65$, $p < .05$] and the physical presence [$F_{(2, 50)} = 8.97$, $p < .05$] scores increase significantly and linearly during the course of therapy, as revealed by repeated measures ANOVAs. When averaged over the first, fifth and last therapy session, the therapeutic bond and the physical presence scores are 23.94 (3.07) and 64.52 (sd= 19.65). As for the other subscales measuring presence, the social presence subscale increase significantly over time as well [$F_{(2, 50)} = 16.75$, $p < .05$], but not the absorption subscale [$F_{(2, 50)} = 2.38$, ns].

Conclusions

Many psychotherapists (psychologists, psychiatrists, etc.) are reluctant to conduct psychotherapy in videoconference with patients located in a remote location. Most psychotherapists are afraid that it wouldn't be possible to build a therapeutic alliance in videoconference, much less a strong therapeutic bond [27], most notably because videoconference could make it impossible to convey warmth, empathy and understanding. An increasing number of studies are showing that this worry is not warranted and is it possible to develop a strong alliance in videoconference, even a strong therapeutic bond. For example, Allard et al. [19] compared CBT delivered in face-to-face and in videoconference and found that the alliance and the therapeutic bond, both measured twice with two instruments (the *Working Alliance Inventory* and the *California Psychotherapy Alliance Scale)* are excellent in both conditions. If a strong therapeutic bond can be build, then what are the facilitating factors? Is the feeling of presence involved, as suggested by Bouchard et al. in 2000 [21]?

The results of current study confirm that presence indeed plays a significant role in predicting the bond between the patient and the therapist. The patient's felt strongly that they were physically in the room with the therapist. This subjective impression predicted more than 20% of the variance in the strength of the bond between them. From a clinical psychologist point of view, this finding is quite fascinating as it suggests that: (a) a phenomenon allows patients to forget they are not physically with their therapist; (b) in addition to classical variables such as empathy, warmth, understanding and psychotherapy techniques, at least one other factor, namely the feeling of presence, facilitates the establishment of a therapeutic bond; and (c) the illusion of non mediation can occur in telepsychotherapy.

Table 1. Summary of the hierarchical regression for the Physical Presence after session 1.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.190[a]	.036	-.016	4.727	.036	.693	2	37	.507
2	.481[b]	.232	.168	4.278	.196	9.170	1	36	.005

a. Predictors: (Constant), Pre-Tx PDA severity, ITQ.

b. Predictors: (Constant), Pre-Tx PDA severity, ITQ, Physical Presence after the first therapy session.

Table 2. Coefficients for the hierarchical regression for the Physical Presence after session 1.

Coefficients [a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations		
		B	Std. Error	Beta			Zero-order	Partial	Part
1	(Constant)	19.193	4.755		4.036	.000			
	ITQ	.012	.063	.033	.194	.847	-.024	.032	.031
	Pre-TX PDA severity	.097	.083	.197	1.168	.250	.187	.189	.189
2	(Constant)	16.080	4.425		3.634	.001			
	ITQ	-.009	.058	-.025	-.162	.872	-.024	-.027	-.024
	Pre-TX PDA severity	.052	.076	.107	.686	.497	.187	.114	.100
	Physical presence, session 1	.095	.031	.452	3.028	.005	.467	.451	.442

a. Dependent Variable: Bond - session 1.

Table 3. Summary of the hierarchical regression for the Physical Presence averaged across the three measurement points.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.219[a]	.048	-.035	3.12356	.048	.579	2	23	.568
2	.550[b]	.303	.208	2.73347	.255	8.033	1	22	.010

a. Predictors: (Constant), Pre-Tx PDA severity, ITQ

b. Predictors: (Constant), Pre-Tx PDA severity, ITQ, Physical Presence averaged over session 1, 5 and 12

Table 4. Coefficients for the hierarchical regression for the Physical Presence averaged across the three measurement points.

Coefficients [a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations		
		B	Std. Error	Beta			Zero-order	Partial	Part
1	(Constant)	19.865	3.851		5.159	.000			
	ITQ	.048	.051	.203	.932	.361	.138	.191	.190
	Pre-Tx PDA severity	.058	.069	.182	.835	.412	.110	.172	.170
2	(Constant)	15.223	3.747		4.063	.001			
	ITQ	.039	.045	.166	.871	.393	.138	.182	.155
	Pre-Tx PDA severity	.058	.061	.183	.959	.348	.110	.200	.171
	Physical Presence averaged over session 1, 5 and 12	.079	.028	.506	2.834	.010	.513	.517	.505

a. Dependent Variable: Bond averaged over session 1, 5 and 12.

The strength of the feeling of physical presence, and its relationship with the therapeutic bond established between two people communicating in videoconference appeared qualitatively stronger in telepsychotherapy compared to, for example, business meetings, supervisions or attending to classes in videoconference. No data were collected in the current study to support such subjective impression. However, according to therapists and a few patients involved in the study who had already been in a videoconference, the illusion of non-mediation did appear to be stronger. It may be related to the fact that each telepsychotherapy session linked only two sites at a time (called point-to-point videoconferencing in technical terms) and both users could see each other very well. Most of our therapists and patients who had already been in a videoconference participated in multi-point videoconferencing with several people in each location. Presence may also be increased by the emotional valence of the communications. As opposed to factual discussions often occurring in business-like videoconferences, telepsychotherapy involves sharing and working on deep feelings, core beliefs, dysfunctional behaviors and intimate life issues. Or it may simply be related to the nature of psychotherapy itself (i.e., meeting a professional in an office to discuss personal matters). Further research comparing telepsychotherapy to other applications of the videoconference technology is therefore warranted.

Our data also showed that social presence was related to the strength of the bond between the patient and the therapists. The partial correlations were higher than those of the physical presence, suggesting that is may be an even stronger predictor, or that it is biased by the quality of the human relationship between the patient and the therapist. For both of these factors of the *Telepresence in Videoconference Scale*, the relationship with the strength of the patient's bond with his or her therapists is significant after the first therapy session and across the three assessment points. None of these relationships were significant for the absorption subscale. This finding suggests that the illusion of non-mediation is strong enough to let patient's feel they are "in therapy", "with their therapist", but not enough to loose track of time and of where they physically are. Further work should now be conducted to see whether presence plays a moderating or a mediating role in the psychotherapeutic process. Using objective measures of the bond and the feeling of presence, as opposed to paper and pencil tests, would also be worth investigating.

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