Psychosomatics 2016:57:292–300 © 2016 The Academy of Psychosomatic Medicine. Published by Elsevier Inc. All rights reserved.

Original Research Reports

A Randomized Double-Blind Controlled Trial Comparing Davanloo Intensive Short-Term Dynamic Psychotherapy as Internet-Delivered Vs Treatment as Usual for Medically Unexplained Pain: A 6-Month Pilot Study

Behzad Chavooshi, Ph.D., Parvaneh Mohammadkhani, Ph.D., Behrouz Dolatshahi, Ph.D.

Background: *Research has shown that Intensive Short-Term Dynamic Psychotherapy (ISTDP) can effectively decrease pain intensity and improve quality of life in patients with medically unexplained pain.* **Objective:** *Understanding that not all patients with medically unexplained pain have access to in-person ISTDP, this study aims to investigate the efficacy of an Internet-delivered ISTDP for individuals with medically unexplained pain using Skype in comparison with treatment as usual.* **Method:** *In this randomized controlled trial, 100 patients were randomly allocated into Internet-delivered ISTDP ($n = 50$) and treatment-as-usual ($n = 50$) groups. Treatment intervention consisted of 16 weekly, hour-long therapy sessions. The primary outcome was perceived pain assessed using the Numeric Pain Rating Scale. The secondary outcome included Depression Anxiety Stress Scale-21, Emotion Regulation Questionnaire, Mindful Attention Awareness Scale, and Quality-of-Life Inventory. Blind assessments were conducted at the baseline, posttreatment, and at a 6-month follow-up.* **Results:** *In the intention-to-treat analysis, pain symptoms in the intervention group were significantly reduced ($p < 0.001$), whereas a reduction was not observed in the treatment as usual group ($p = 0.651$). Moreover, there were significant decreases in depression, anxiety, and stress, as well as a greater increase in emotion regulation functioning, mindfulness, and quality of life observed in the intervention group 6 months after the treatment compared with the treatment as usual condition.* **Conclusion:** *The results of this pilot trial demonstrate that 16 weeks of ISTDP delivered by Skype can significantly improve pain intensity and clinical symptoms of medically unexplained pain.*

(Psychosomatics 2016; 57:292–300)

Key words: medically unexplained pain, intensive short-term dynamic psychotherapy, telemedicine, somatization.

INTRODUCTION

The Internet is rapidly altering the face of mental health service delivery, and evidence suggests that Internet-based interventions are both effective and widely accepted by patients.[1] In a recent review of 15 randomized controlled trials of Internet-based interventions for a variety of mental health disorders and related conditions,[2] Griffiths and Christensen[3] found

Received August 8, 2015; revised December 31, 2015; accepted December 31, 2015. From Department of Clinical Psychology, University of Social Welfare and Rehabilitation Sciences, Tehran, Iran (BC, PM, BD). Send correspondence and reprint requests to Behzad Chavooshi, Ph.D., Department of Clinical Psychology, University of Social Welfare and Rehabilitation Sciences, Koodakyar Ave, Evin, Tehran, Iran; e-mail: chavooshi.behzad@gmail.com

© 2016 The Academy of Psychosomatic Medicine. Published by Elsevier Inc. All rights reserved.

that they can improve mental health outcomes and reduce symptoms in patients suffering from depression, anxiety, and stress. Such programs can also provide services to a larger number of individuals and can respond to the mental health needs of those who may not otherwise receive treatment owing to the many limitations of in-person psychotherapy.

Internet-mediated interventions, in particular, are promising owing to an increasing number of households with access to a high-speed Internet connection. In Iran, 53% of the population across the country, and 77% of Tehran population, have access to the Internet —3 million of which have access to high-speed Internet.

It is critical, therefore, to develop methods for the widespread use of Internet-delivered psychotherapy in treating patients with severe or critical conditions and restrictions, such as patients who suffer from medically unexplained pain (MUP).

MUP refers to pain symptoms that cannot be fully explained by medical diagnosis, injury, medication intake, drugs, or alcohol.[4] Research shows that these patients generally have problems in conscious experiencing of emotions.[5] Serbic and Pincus[6] have proposed that the role of emotional processing could be key to a fuller understanding of the psychologic factors involved in MUP. Also, Baker et al.[7] have argued that emotions lie at the interface between physical and psychologic processes, and therefore impaired emotional processing may be associated with both psychologic factors and physical conditions—such as MUP. Esteves et al.[8] suggest that dysfunctional emotional processing, particularly regarding the suppression of emotions, is associated with MUP.

During the past decade, numerous trials on guided self-help and Internet-delivered cognitive-behavior therapy (CBT) for various psychiatric disorders have been conducted.[9,10] For mild to moderate depression and anxiety disorders, it seems safe to conclude that these treatments are as effective as in-person treatments.[11] Although most research regarding Internet-based psychologic treatments has concerned CBT, there are exceptions. Results from 2 recent randomized controlled trials focusing on the treatment of depression and generalized anxiety disorder indicate that psychodynamic treatments can also be delivered via online self-help treatments.[12,13]

There is evidence that intensive short-term dynamic psychotherapy (ISTDP)—as psychotherapy that emphasizes on pressure on feeling, building emotional tolerance, and systematic clarification and challenge of defenses—can reduce severity of symptoms in patients with medically unexplained symptoms. Recently, Chavooshi et al.[14] have shown that in-person ISTDP can reduce pain intensity among patients with MUP in comparison with Mindfulness-Based Stress Reduction.

Unfortunately, many patients lack access to ISTDP, and the barriers to treatment include lack of appropriate psychotherapeutic centers, concentration of appropriately trained therapists in urban centers, high cost of therapy, social stigma, and personal unease with seeking therapy. It is, therefore, within the aim of this study to provide supporting evidence for Internet-delivered ISTDP (ID-ISTDP), specifically for patients with MUP.

METHODS

Design

A randomized controlled trial design was employed to compare an ID-ISTDP as a treatment group to a Treatment-As-Usual (TAU) group with unrestricted randomization in a 1:1 ratio with no modifications. Both groups also received usual medical care. Researchers, participants, and general practitioners were blinded to randomization pretest. Participants were not offered economic incentives, but the treatment was free of charge as compensation for participation.

The treatment program is a 16-week intervention, within which a number of treatment components are delivered, and most of which are actively integrated within the theoretical frameworks of ISTDP.[15] The treatment consisted of 16 weekly, hour-long therapy sessions. ID-ISTDP treatment group included 2 PhD-level clinical psychologists (1 man and 1 woman). All individual therapists were educated and trained in the basic principles of ISTDP and instructed to adhere to these principles in individual sessions. Before the study, all psychotherapists were also trained in providing ISTDP via Skype. Treatment integrity and adherence to ISTDP principles were continuously checked in the bimonthly group supervisions by first author. In addition, videotapes of all individual sessions were available for systematic adherence and competence evaluation.

Procedure

Participants were recruited via patient self-help groups, news media, and referrals from a multidisciplinary pain and rheumatology clinic, a neurology clinic,

and a gastroenterology clinic at an academic health center in Tehran, Iran. For this study, MUP was defined as any current principal somatic pain reported by patients for whom no definite medical diagnosis could be found by physical examination and appropriate investigation. To make this judgment, we used investigation results and physicians' opinions. The physician's opinion was determined by the final diagnosis stated in the clinical case notes. A patient was recognized as having MUP when their physician gave a diagnosis of "functional," or continued to defer the diagnosis because of no detected physical abnormality. These were considered as indications that the pain symptoms were medically unexplained. Assessors were registered psychologists and 1 probationary psychologist. To evaluate reliability of assessment, a different assessor reviewed 15% of the written clinical interviews, resulting in inter-rater agreement of $r = 0.89$ for the diagnosis of MUP.

Patients were randomized in blocks by a computer algorithm. Block size was randomly chosen to include either 3 or 6 patients. Information regarding eligible patients entering the trial was sent to a study manager who otherwise had no contact with the patients. The study manager then determined block size and randomized the patients, but only if there were enough patients to fill the next block.

Inclusion criteria were 18–45 years of age, at least 1 MUP with duration of 6 months, having access to a computer—desktop, laptop, or tablet—and high-speed Internet at home (a minimum bandwidth of 2 Mbps was required), fluency in Farsi and provision of consent. The exclusion criteria were drug/alcohol abuse, psychotic or bipolar disorders, anorexia nervosa, acute suicidality, and pregnancy. The research assessor administering the observer-rated scales was blinded to the group assignment at baseline and at the 6-month follow-up. She had no access to clinician notes, which were kept in a different office, and was not involved in the supervision or discussion of treatments. Although the blinded assessor was located in the same building as the psychotherapists, they worked on separate floors.

Description of the Intervention

Internet-Delivered Intensive Short-Term Dynamic Psychotherapy

ISTDP is a brief psychotherapy treatment based on traditional psychodynamic principles, with a strong focus on emotional mobilization and handling of defenses against experiencing of emotions.[16] Through this focus, both the patient and the psychotherapist can directly observe the patient's ability to identify and experience emotions. In this process, any somatic effects of emotional dysregulation can also be directly examinable by both.

The treatment philosophy and treatment principles of ISTDP have been described in detail elsewhere.[15] In summary, the main emphasis of ISTDP is to rapidly help the patient acknowledge, identify, experience, and express unconscious and warded-off affects or emotions that theoretically are postulated to produce unconscious anxiety, symptom disturbances, and various defensive strategies that become interpersonally maladaptive and may produce characterological disturbances within the patient.[16] The main technical interventions are to detect, clarify, and challenge affect-avoiding strategies or defenses in systematic collaboration with the patient, while inviting and encouraging clear awareness and deep experience of warded-off feelings. This process, when effectively executed, mobilizes what Davanloo called "complex transference feelings" with the therapist, thereby actualizing the patient's most pressing patterns of attachment-related affect and his most characteristics coping strategies with these affects within the therapeutics relationship. Simultaneously, the conscious and unconscious therapeutic alliance is mobilized, producing a force within the patient that allies with the therapist in the face of avoidance strategies and resistances.[17] In turn, this leads to a reduction in defensive coping so that the patient can more directly work through unresolved feelings related to broken attachments in the past and subsequent trauma.[18] In the words of Solbakken and Abbass[16]

"This model offers a conceptually integrated intervention system directed at dealing with both conscious and unconscious maneuvers that prevent genuine emotional closeness; minimize strong affect; and leave the patient in a passive, helpless, compliant, or defiant position vis-a-vis the therapist. Such defensive processes are considered the principal obstacles to therapeutic engagement and improvement, contributing to eventual treatment failure if not identified and challenged." (p.517)

Outcome Measures

Data regarding age, gender, marital status, employment, medication, and education level were included in the baseline demographic assessment.

Primary and Secondary Outcomes

Pain intensity as a primary outcome was assessed using an 11-point Numerical Pain Rating Scale with anchors of 0 = no pain to 10 = worst pain. Patients were asked to mark the number that best represented the severity of their pain in the past week.[19] Depression Anxiety Stress Scale-21 (DASS-21) is a short form of DASS, which is a self-report 4-point Likert scale. The alpha reliability coefficients for the DASS-21 subscales have been examined in clinical and nonclinical samples and reported as 0.94 for DASS-D, 0.87 for DASS-A, and 0.91 for DASS-S.[20] A third measure was the Emotion Regulation Questionnaire, which was used to measure respondent's tendency to regulate their emotions. The Emotion Regulation Questionnaire has 2 subscales measuring an individual's use of cognitive reappraisal and expressive suppression as emotion regulation strategies. Alpha reliabilities averaged 0.79 for reappraisal and 0.73 for suppression. Test-retest reliability across 3 months was 0.69 for both scales.[21] Quality-of-Life Inventory was used to measure life quality in 16 domains. The Quality-of-Life Inventory has test-retest reliability of $r = 0.92$ and a Cronbach α of 0.81.[22] Mindful Attention Awareness Scale was used to measure mindfulness. The Mindful Attention Awareness Scale is a reliable instrument with a Cronbach α of 0.87.[23]

Statistical Analysis

The analysis involved using all available data as per an intention-to-treat approach. To verify that randomization produced equivalent groups, *t*-test and chi-square analysis were conducted. Primary hypothesis testing was conducted with repeated measures ANOVA with contrasts in SPSS 22.0. Chi-square analysis was used to evaluate the association between clinically significant improvements and group assignment. To examine maintenance of treatment effects in the Internet-based treatment group at the 6-month follow-up, one-way analysis of variance with repeated measures were conducted. Within and between-group effect sizes (Cohen *d*) were calculated by dividing the differences in means by the pooled standard deviations. Cohen standards for evaluating the magnitude of effect sizes were utilized, classifying small effects as $d = 0.2$–0.5; medium effects as $d = 0.5$–0.8; and large effects as $d > 0.8$.[24] Frequencies were reported for both groups based on the completed sample. Reliable change was computed using the Jacobson and Truax method,[25] and using the more conservative denominator recommended by Maassen.[26] We planned to recruit 160 for this study; however, recruitment was slower than expected. With 100 participants we have 80% power ($\alpha = 0.05$) to show an effect size of 0.56 (which approximately equates to a difference in the mean change of 3 on the Numerical Pain Rating Scale).

RESULTS

Sample Characteristics

The Figure shows the flow of participants through the study. A total of 162 patients were assessed for eligibility; 40 patients did not meet the inclusion criteria, and an additional 27 individuals declined participation—citing unavailability because of time demands, travel requirements, scheduling problems, lack of interest, or unspecified reasons. A total of 100 patients were randomized to ID-ISTDP ($n = 50$) or TAU ($n = 50$). Overall, 78% of participants randomized to treatment completed weekly sessions (16 sessions).

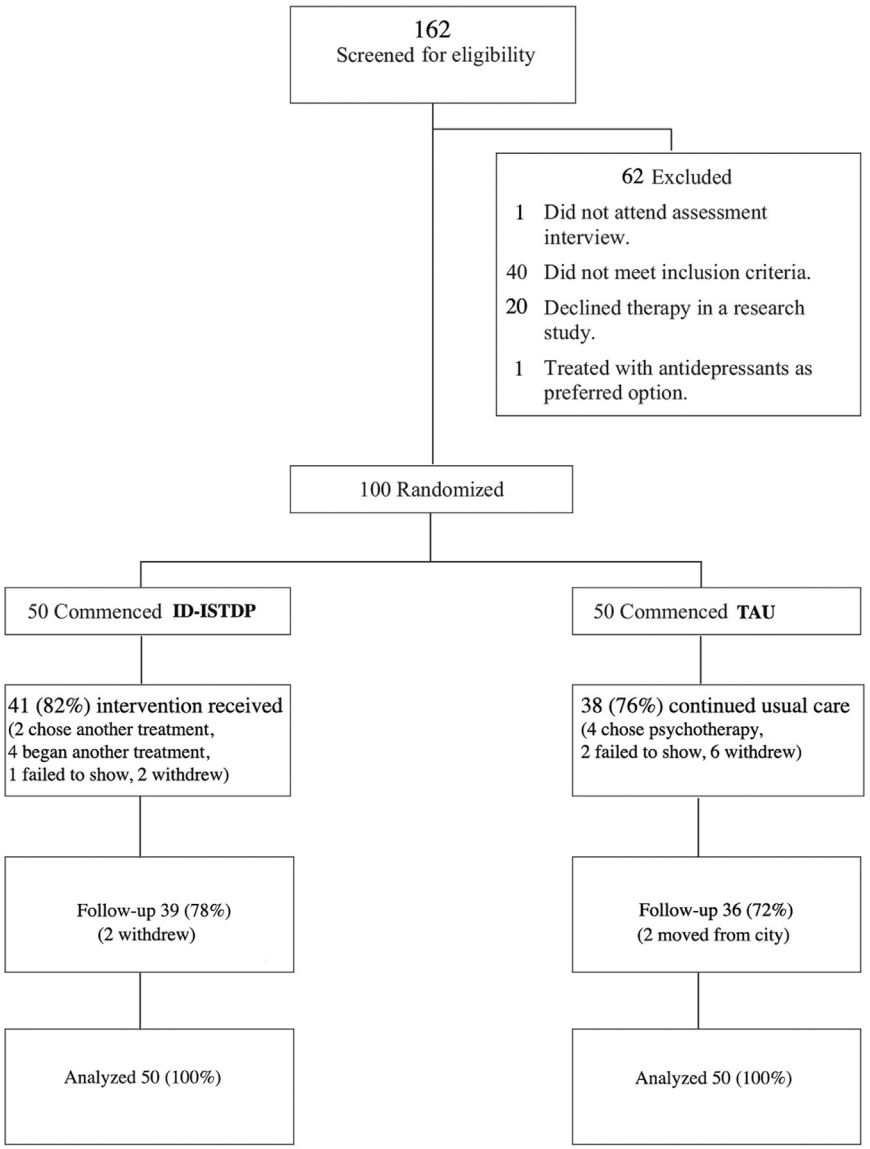
Table 1 provides the baseline demographic and clinical characteristics for all patients of each group. Nearly all of the patients were stabilized on a psychiatric medication—including an antidepressant, anxiolytic, antiepileptic, or analgesic. The number of patients on medication was similar across both groups, with no alterations to the prescription throughout the duration of the study. There were no significant differences between the 2 groups in demographics and other baseline variables.

Effect of Intervention on Outcome Measures

Primary Outcome: Pain Intensity

Table 2 shows the primary and secondary outcomes for the 2 conditions at the 3 assessment points. A significant improvement was found in the ID-ISTDP group compared with the TAU group for the primary outcome—Numeric Pain Rating Scale. Results showed significant group ($p < 0.001$), time main effects ($p < 0.001$), and a significant interaction effect of group in time ($p < 0.001$), signifying different Numerical Pain Rating Scale

FIGURE. Flow Chart Showing Participants Screened, Eligible, Randomized and Treated with ISTDP and TAU.



patterns over time between groups. The size of effect of this difference at the 6-month follow-up was $d = 0.79$, and according to Cohen, this is a large size of effect.[24]

Secondary Outcome Measures

There was significant main effect for group, ($p = 0.614$), or interaction effect of group in time, ($p = 0.622$), but a significant main effect for time was found for depression, ($p < 0.001$). Subsequent contrasts of the estimated marginal means found a significant total group mean decrease of 8.89 points between the baseline and the 6-month follow-up, (t [94.12] = 5.26 [$p < 0.001$]), which was a large size of effect ($d = 0.64$), a significant drop of 9.17 points from baseline to post of treatment, (t [86.39] = 3.56 [$p = 0.001$]), and a further decrease of 3.42 from post of treatment to 6-month follow-up, (t [81.21] = 2.97 [$p = 0.004$] [$d = 0.83$]).

There was no significant main effect for the group, ($p = 0.342$), or interaction effect of group in time, ($p = 0.162$), but a significant main effect for time was found for the anxiety scale ($p = 0.023$). Subsequent contrasts of the estimated marginal means found a significant

TABLE 1. Demographic and Clinical Variables at Baseline

Characteristic	ID-ISTDP	TAU	Statistics (*t*-test or χ^2)
N	50	50	
Mean age, ±SD	38.82 ± 7.12	37.35 ± 6.81	0.64
Female, *n* (%)	19 (38)	21 (42)	0.63
Marital status, *n* (%)			0.54
Single	12 (24)	15 (30)	
Married	22 (44)	19 (38)	
Separated or divorced	16 (32)	16 (32)	
Employment, *n* (%)			0.45
Unemployed	12 (24)	13 (26)	
Employed or self-employed	25 (50)	26 (52)	
Student (full time)	3 (6)	4 (8)	
Homemaker	10 (20)	7 (14)	
Education level, *n* (%)			0.27
11 years/GCSE	7 (14)	6 (12)	
Associates	13 (26)	19 (38)	
Bachelor	15 (30)	15 (30)	
Master	15 (30)	10 (20)	
Duration of pain (year, ±SD)			
Onset of disease	7.77±2.04	7.05±1.53	0.46
Since diagnosis	3.34±0.15	3.63±0.35	0.57
Baseline pain score, ±SD	7.04±1.13	7.12±0.65	0.49
Drug intake, *n* (%)			0.51
Antidepressant	17 (34)	15 (30)	
Anxiolytic	10 (20)	17 (34)	
Antiepileptic	17 (34)	11 (22)	
Analgesic	6 (12)	7 (14)	

ID-ISTDP = Internet-delivered intensive short-term dynamic psychotherapy; SD = standard deviation; TAU = treatment-as-usual.

total sample mean decrease of 6.49 points from baseline to the 6-month follow-up (t [86.35] = 2.86 [p = 0.007]) with a large size of effect (d = 0.89); no further contrasts were significant.

There was no significant main effect for group, (p = 0.181), or interaction effect of group in time, (p = 0.275). A significant effect for time was found, (p < 0.001), with posthoc analysis showing a significant perceived stress in the intervention group decreasing by 5.89 points between baseline to the 6-month follow-up, (t [91.63] = 4.08 [p < 0.001]) and an above large size of effect (d = 0.77), a significant drop of 6.25 points from baseline to posttreatment, (t [88.59] = 4.56 [p=0.001]), and a further decrease of 3.42 from posttreatment to the follow-up, (t [83.21] = 2.77 [p = 0.004] [d = 0.74]). Outcome measures for time, group, and interaction of time and group are shown in Table 3.

Significant between-group differences favoring the intervention group were also found for cognitive reappraisal (mean deviation = 8.7; 95% CI: 6.3–14.7 [p = 0.07]) and suppression of emotion (mean deviation = −4.7; 95% CI: −8.1 to 2.1 [p = 0.02]) compared with the usual care group at the follow-up. The intervention group also demonstrated a significantly greater increment in mindfulness (mean deviation = 23; 95% CI: 12.1–33.3 (p = 0.003)] compared with the usual care group at follow-up corresponding to large postintervention effect size differences between the usual care and the intervention conditions.

As a measure of quality of life, the Quality-of-Life Inventory was used. The between-group effect sizes were significantly in favor of ID-ISTDP at the follow-up (mean deviation = 3.3; 95% CI: 5.5–1.5 [p = 0.002]) when compared with TAU.

Medication

We compared the use of medication at baseline and at the follow-up for antidepressants, anxiolytic, antiepileptic, and painkillers. There were no baseline differences for any of these variables. Antidepressant medication was reduced significantly from the baseline (45.7%) to the 6-month follow-up (35.0%) (p = 0.01, χ^2 = 5.94).

TABLE 2. Means (SDs) and Within-Group Effect Sizes (Cohen *d*) Including CIs for Primary and Secondary Outcome Measures Before Treatment, After Treatment, and at the 6-Month Follow-Up

	Internet-delivered ISTDP ($n = 50$)			Treatment as usual ($n = 50$)		
	Mean (SD)	**95% CI**	**Cohen *d***	**Mean (SD)**	**95% CI**	**Cohen *d***
NPRS						
Baseline	7.10 (1.32)	2.75–7.15		7.31 (0.97)	4.46–8.27	
Posttreatment	5.32 (1.42)	2.21–6.43	0.89	5.65 (2.64)	4.57–8.11	0.33*
6-Month follow-up	3.97 (2.44)	2.17–3.11	0.79	5.41 (1.77)	4.62–8.12	0.28†
DASS-depression						
Baseline	16.12 (5.5)	13.32–16.6		13.39 (3.3)	10.03–16.18	
Posttreatment	7.8 (3.8)	4.36–10.23	0.64	13.47 (2.9)	11.67–17.06	0.37
6-Month follow-up	6.5 (3.5)	4.45–9.25	0.83	12.31 (3.5)	11.19–17.14	0.36
DASS-anxiety						
Baseline	13.3 (5.3)	8.23–16.36		13.4 (3.4)	13.34–17.45	
Posttreatment	6.2 (3.4)	4.74–13.13	0.94	14.2 (3.8)	14.14–18.4	0.53
6-Month follow-up	6.5 (5.5)	3.41–9.37	0.89	15.3 (5.1)	13.79–16.65	0.57
DASS-stress						
Baseline	16.6 (3.5)	14.65–19.63		15.5 (2.5)	13.54–19.21	
Posttreatment	8.5 (1.2)	6.49–13.56	0.83	16.2 (3.7)	13.14–19.11	0.53
6-Month follow-up	6.7 (4.5)	4.36–10.27	0.82	15.1 (3.5)	12.54–18.22	0.55
ERQ (REA)						
Baseline	16.61 (6.5)	13.66–19.69		16.6 (6.65)	12.66–18.62	
Posttreatment	24.77 (3.8)	23.72–28.53	0.77	16.2 (5.7)	13.1–18.23	0.58
6-Month follow-up	24.1 (6.3)	19.18–28.23	0.74	15.4 (5.6)	12.65–17.84	0.49
ERQ (SUP)						
Baseline	11.15 (7.9)	7.28–14.33		12.3 (8.5)	9.87–14.6	
Posttreatment	5.52 (3.4)	3.74–8.21	0.84	11.9 (7.5)	9.73–13.67	0.58
6-Month follow-up	7.61 (3.5)	6.64–9.28	0.78	11.6 (7.5)	9.45–13.66	0.52
MAAS						
Baseline	36.8 (16.5)	29.35–39.51		35.2 (13.2)	30.38–35.55	
Posttreatment	45.1 (11.2)	39.41–49.58	0.54	31.3 (15.2)	29.41–35.86	0.47
6-Month follow-up	44.5 (12.2)	39.12–48.23	0.32	33.5 (18.5)	31.12–36.57	0.44
QOLI						
Baseline	1.9 (1.2)	0.77–3.45		2 (1.67)	1.2–6.5	
Posttreatment	4.4 (1.2)	2.6–6.85	0.63	1.7 (1.7)	0.83–4.4	0.85
6-Month follow-up	4.4 (1.9)	2.6–6.89	0.63	1.5(1.5)	0.64–5.6	0.84

DASS = Depression Anxiety Stress Scale; ERQ = Emotion Regulation Questionnaire; ISTDP = Intensive Short Term Dynamic Psychotherapy; MAAS = Mindful Attention Awareness Scale; NPRS = Numeric Pain Rating Scale; QOLI = Quality-of-Life Inventory; REA = Reappraisal; SUP = Suppression.

* Before treatment vs after treatment.

† Before treatment vs 6-month follow-up.

DISCUSSION

This study is among the first to test the efficacy of Internet-delivered ISTDP for MUP through a user-friendly and accessible videoconferencing application installed on the patient's personal computer. Treatment delivered through Skype was successful, as evidenced by the significant reductions in pain severity and depression, anxiety and stress levels, as well as a greater increase in emotion regulation functioning, mindfulness, and quality of life at posttreatment and at the 6-month follow-up.

Results of the current study are consistent with other studies that have found efficacy of ISTDP for somatization disorders, such as medically unexplained symptoms,[5,14,27–29] including 2 meta-analyses.[30,31]

Unresolved unconscious emotional issues have long been considered an important causal factor in a

TABLE 3. Outcome Measure Scores for Time, Group, and Interaction of Time and Group

	Significance *p*		
	Time	**Group**	**Time × Group**
NPRS	0.000	0.000	0.000
DASS-depression	0.003	0.342	0.161
DASS-anxiety	0.002	0.001	0.004
DASS-stress	0.000	0.181	0.275
ERQ (REA)	0.007	0.000	0.001
ERQ (SUP)	0.004	0.000	0.000
MAAS	0.551	0.007	0.001
QOLI	0.000	0.000	0.000

DASS = Depression Anxiety Stress Scale; ERQ = Emotion Regulation Questionnaire; MAAS = Mindful Attention Awareness Scale; NPRS = Numeric Pain Rating Scale; QOLI = Quality-of-Life Inventory; REA = Reappraisal; SUP = Suppression.

range of physical illnesses and somatic symptom disorders.[32] In clinical practice, ISTDP focuses on this unconscious process by which emotions translate into somatic symptoms, somatic focus, and, indeed, objectively measurable physical sequelae. On the contrary, corrective emotional experience and building emotional/anxiety tolerance are regarded as an important factor of change.[15–18]

Based on the therapist and participant's experiences using Skype in this study, there are several recommendations for future therapy programs utilizing videoconferencing. Providing thorough technical and troubleshooting training upfront to therapists and patients before the start of the treatment can reduce the number and severity of technical difficulties that occur during sessions. Establishing a high-quality Internet connection and using adequate hardware to improve visual and audio quality can also enhance treatment. For example, placing the therapist's webcam close to the visual image of the patient's face on the computer screen to appear to the patient that the therapist is making eye contact. Importantly, patients should be informed of the privacy risks associated with online communication, as well as the user policies of the videoconferencing service regarding the collection of personal information.

These results must be considered in light of a number of limitations outlined in the following. An active, standardized treatment control condition was not employed. Some TAU patients were receiving regular pharmacotherapy, whereas others were not—this may limit the generalization of our findings, even though the patients in TAU remained stable during the trial. Nevertheless, additional research trials could compare ID-ISTDP with standardized medication, psychotherapy, or combination treatment control conditions. The current sample size, while sufficient for the study's aims, was small. Additionally, as the treatment outcomes of the current ID-ISTDP program appear similar to those of in-person ISTDP programs, direct comparisons are yet to be made between in-person and online ISTDP for MUP. The need for future research that establishes a causal relationship between outcome and in-session events in ISTDP is acknowledged and is important to enable further knowledge of the mechanisms of change in ISTDP.

CONCLUSION

This study suggests that Internet-delivered intensive short-term dynamic psychotherapy in comparison with treatment as usual might be an effective treatment for reducing pain intensity. Further well-designed studies on ID-ISTDP in chronic psychogenic pain and another medically unexplained symptoms are needed and should include longer intervention and follow-up periods, more active controls, and matched attention time.

The authors thank the participating General Practitioners, their staff, the participating patients, and the contributing research assistants.

Disclosure: The authors disclosed no proprietary or commercial interest in any product mentioned or concept discussed in this article.

References

1. Reyes-Portillo JA, Mufson L, Greenhill LL, et al: Web-based interventions for youth internalizing problems: a systematic review. J Am Acad Child Adolesc Psychiatry 2014; 53(12):1254–1260
2. Griffiths K, Farrer L, Christensen H: Clickety-click: E-mental health train on track. Australas Psychiatry 2007; 15(2):100–108
3. Griffiths KM, Christensen H: Review of randomized controlled trials of Internet interventions for mental disorders and related conditions. Clin Psychol 2006; 10(1):16–29
4. Rief W, Broadbent E: Explaining medically unexplained symptoms—models and mechanisms. Clin Psychol Rev 2007; 27(7):821–841
5. Abbass A, Campbell S, Magee K, Tarzwell R: Intensive short-term dynamic psychotherapy to reduce rates of emergency department return visits for patients with medically unexplained symptoms: preliminary evidence from a pre-post intervention study. CJEM 2009; 11(6):529–534
6. Serbic D, Pincus T: Pain-related guilt in low back pain. Clin J Pain 2014; 30(12):1062–1069
7. Baker R, Thomas S, Thomas PW, Gower P, Santonastaso M, Whittlesea A: The emotional processing scale: scale refinement and abridgement (EPS-25). J Psychosom Res 2010; 68(1):83–88
8. Esteves JE, Wheatley L, Mayall C, Abbey H: Emotional processing and its relationship to chronic low back pain: results from a case-control study. Manual Ther 2013; 18(6):541–546
9. Andersson G: Using the Internet to provide cognitive behavior therapy. Behav Res Ther 2009; 47:175–180
10. Hedman E, Ljótsson B, Lindefors N: Cognitive behavior therapy via the Internet: a systematic review of applications, clinical efficacy and cost-effectiveness. Expert Rev Pharmacoecon Outcomes Res 2012; 12(6):745–764
11. Cuijpers P, Donker T, Van Straten A, Li J, Andersson G: Is guided self-help as effective as face-to-face psychotherapy for depression and anxiety disorders? A systematic review and meta-analysis of comparative outcome studies Psychol Med 2010; 40(12):1943–1957
12. Andersson G, Paxling B, Roch-Norlund P, et al: Internet-based psychodynamic vs. cognitive behavioral guided self-help for generalized anxiety disorder: a randomised controlled trial. Psychother Psychosom 2012; 81(6):344–355
13. Johansson R, Ekbladh S, Hebert A, et al: Psychodynamic guided self-help for adult depression through the Internet: a randomised controlled trial. PLoS One 2012; 7:e38021
14. Chavooshi B, Mohammadkhani P, Dolatshahee B: Efficacy of intensive short-term dynamic psychotherapy for medically unexplained pain: a pilot three-armed randomized controlled trial comparison with mindfulness-based stress reduction. Psychother Psychosom 2016; 85(2):123–125
15. Davanloo H: Unlocking the Unconscious. Chichester: Wiley; 1990
16. Solbakken OA, Abbass A: effective care of treatment-resistant patients in an ISTDP-based in patient treatment program. Psychiatr Ann 2013; 43(11):516–522
17. Abbass A: Reaching Through Resistance: Advanced Psychotherapy Techniques. Kansas City: Seven Leaves Press; 2015
18. Abbass A, Sheldon A, Gyra J, Kalpin A: Intensive short-term dynamic psychotherapy for DSM–IV personality disorder: a randomized controlled trial. J Nerv Ment Dis 2008; 196(3):211–216
19. Jensen MP, McFarland CA: Increasing the reliability and validity of pain intensity measurement in chronic pain patients. Pain 1993; 55(2):195–203
20. Antony MM, Bieling PJ, Cox BJ, Enns MW, Swinson RP: Psychometric properties of the 42-item and 21-item versions of the Depression Anxiety Stress Scales in clinical groups and a community sample. Psychol Meas 1998; 10:176–181
21. Gross JJ, John OP: Individual differences in two emotion regulation processes: implications for affect, relationships, and well-being. J Pers Soc Psychol 2003; 85(2):348–362
22. Frisch MB, Cornell J, Villanueva M, Retzlaff PJ: Clinical validation of the Quality of Life Inventory: a measure of life satisfaction for use in treatment planning and outcome assessment. Psychol Assess 1992; 4(1):92–101
23. Brown KW, Ryan RM: The benefits of being present: mindfulness and its role in psychological well-being. J Pers Soc Psychol 2003; 84(4):822–848
24. Cohen J: Statistical power analysis for the behavioral sciences. Hillside, NJ: Erlbaum; 1988
25. Jacobson NS, Truax P: Clinical significance: a statistical approach to defining meaningful change in psychotherapy research. J Consult Clin Psychol 1991; 59(1):12–19
26. Maassen GH: The standard error in the Jacobson and Truax Reliable Change Index: the classical approach to the assessment of reliable change. J Int Neuropsychol Soc 2004; 10(6):888–893
27. Abbass A, Tarzwell R, Hann SG, Lenzer I, Campbell S, Maxwell D: Implementing an emotion-focused consultation service to examine medically unexplained symptoms in the emergency department. J Acad Med Psychol 2010; 1(2): 44–51
28. Abbass A, Lovas D, Purdy A: Direct diagnosis and management of emotional factors in chronic headache patients. Cephalalgia 2008; 28(12):1305–1314
29. Coughlin Della Selva P: Emotional processing in the treatment of psychosomatic disorders. J Clin Psychol 2006; 62:539–550
30. Abbass A, Kisely S, Kroenke K: Short-term psychodynamic psychotherapy for somatic disorders. Systematic review and meta-analysis of clinical trials. Psychother Psychosom 2009; 78(5):265–274
31. Abbass A, Town J, Driessen E: Intensive short-term dynamic psychotherapy: a systematic review and meta-analysis of outcome research. Harv Rev Psychiatry 2012; 20 (2):97–108
32. Burton C: Beyond somatization: a review of the understanding and treatment of medically unexplained physical symptoms (MUPS). Br J Gen Pract 2003; 53(488):231–239