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Halifax somatic symptom disorder trial: A pilot randomized controlled trial of intensive short-term dynamic psychotherapy in the emergency department

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ABSTRACT

Background: Patients commonly present at hospital Emergency Departments (ED) with distress that meet criteria for a Somatic Symptom and Related Disorder (SSRD). Without access to effective treatment, risk of ongoing patient disability and further ED visits is high.
Method: This pilot trial used a randomized parallel group design to test the efficacy of Intensive Short-Term Dynamic Psychotherapy (ISTDP). ED patients who met criteria for SSRD were recruited. The effects of ISTDP plus medical care as usual (MCAU) were judged through comparison against 8 weeks of MCAU plus wait-list symptom monitoring (WL-SM). The primary outcome was somatic symptom at 8 weeks. Patients allocated to WL-SM could cross-over to receive ISTDP and 6-month follow-up data was collected. Baseline measures of patient attachment style and alexithymia were collected to examine vulnerabilities to somatic symptoms. ClinicalTrials.gov: NCT02076867.
Results: Thirty-seven patients were randomized to 2 groups (ISTDP = 19 and WL-SM = 18). Multi-level modelling showed that change over time on somatic symptoms was significantly greater in the ISTDP group. Between-group differences were large at 8 weeks (Cohen's $d = 0.94$) and increased by end of treatment (Cohen's $d = 1.54$). Observed differences in symptoms of depression and illness anxiety were also large, favoring ISTDP, and effects were maintained at follow-up. Patients receiving ISTDP had reduced ED service utilization at 2-year follow-up.
Conclusions: ISTDP appears an efficacious treatment for SSRD and a larger randomized trial is justified.

Somatic Symptom and Related Disorders (SSRD) is the diagnostic classification introduced in DSM-5 [1] to replace Somatoform Disorders. Patients with distressing and functionally impairing somatic symptoms with or without medical explanation often present to emergency departments (ED). SSRD and medically unexplained physical symptoms (MUPS) may be one explanatory factor for the repeated finding that a small number of patients account for a disproportionally large number of ED visits [2–5]. While mental health problems are common in patients who frequently attend the ED [2,6,7], a formal diagnosis of SSRD may not be given. Higher physical symptoms predict greater healthcare utilization [8] and somatization has an independent effect on healthcare use after the effect of psychiatric comorbidity is controlled [9]. Despite this, reviews of ED-based interventions for mental health problems [10] have typically not focused on SSRD.

Psychological therapies are commonly used to treat SSRD and related MUPS but evidence-based treatments such as Cognitive-Behavior Therapy (CBT) commonly demonstrate only small to medium effect sizes in RCTs [11,12]. Short-Term Psychodynamic Psychotherapies (STPP) may offer advantages for addressing emotional contributors as they relate to MUPS with larger treatment effects than CBT reported in two trials [13,14]. A meta-analysis update of randomized controlled trials (RCT) of STPP for functional somatic disorders found large improvements in somatic symptom change at short- and long-term outcomes compared to minimal treatment, treatment as usual or wait-list controls [15].

One of the STPP models, Intensive Short-Term Dynamic Psychotherapy (ISTDP), has been found efficacious in three RCTs for MUPS [16–18] and effective in naturalistic studies of somatic symptoms [19]. A recent meta-analysis comparing the effectiveness of ISTDP to CBT for chronic pain found statistically larger effects on pain and depression

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symptoms favoring ISTDP across three RCTs [20]. A controlled trial of ISTDP for ED patients with MUPS found reduced ED visits and symptom change after treatment [21]. The current study aimed to build upon these results by testing the efficacy of ISTDP for ED patients within a preliminary randomized controlled design. We examined the outcomes of patients receiving Medical Care as Usual (MCAU) plus wait-list symptom monitoring (WL-SM) versus MCAU plus ISTDP.

The study of moderators of treatment effects can inform for which patients treatment works well. Luyten and colleagues [22] proposed a working model of MUPS that describes patient 'attachment strategies' and 'mentalization impairments', as perpetuating factors. At times of increased stress, patients with MUPS may excessively rely on learned tendencies towards denial of attachment needs, and either assertion of their autonomy (avoidant attachment style) or pronounced efforts to find support and relieve anxiety (anxious attachment style). Alexithymia refers to difficulties with emotional awareness and relates to capacity to mentalize upon one's own bodily sensations and their connection to internal emotional states. Collectively, patient attachment style and degree of alexithymia, are implicated to vicious cycles of help seeking behavior and responding to MUPS, which in-turn may exacerbate symptoms.

In the current pilot study, we expect patients receiving ISTDP plus MCAU will show large improvements in somatic symptoms compared to MCAU plus WL-SM. We also predict that in patients who receive ISTDP, there will be a reduction in the number of ED visits when comparing service utilization pre- to post-treatment. Finally, exploratory predictor and moderation analyses will examine the role of attachment style and alexithymia on change in somatic symptoms.

1. Method

1.1. Study design

This study used a randomized controlled parallel group design to compare ISTDP plus MCAU against a WL-SM plus MCAU group. As a pilot trial, we aimed to include the first 40 consecutively recruited participants because we felt this would be large enough to inform about recruitment and it is consistent with published sample sizes for pilot research [23]. Furthermore, based upon a pre-post outcome study of ISTDP for MUPS [21] large effects were expected to justify hypothesis testing and the sample size should allow for exploratory process analysis. A post-hoc power analysis of the study sample size conducted using G-Power, revealed >80% power to detect large between-group effects, based upon the actual sample size and effect size for the primary outcome, and a significance level of alpha = 0.05 [24]. The primary measure for efficacy was change in somatic symptoms measured using the somatic symptoms severity score (SOMS-7 SS) at 8 weeks to control for the passage of time between the two conditions. The efficacy of ISTDP was further examined by comparing symptom change at the end of the 8-week WL-SM to that observed after completed ISTDP treatment, up to a maximum of 20 weekly sessions. This pragmatic wait-period mirrored the routine wait for treatment. Patients in the WL-SM group were informed ISTDP sessions were available after the 8-week wait. The study protocol was registered with ClinicalTrials.gov (NCT02076867) and approved by the Nova Scotia health Authority Research Ethics Board (NSHQ-RS/1016054). Data monitoring was done by the study team.

1.2. Participants

Potential participants were referred by an ED physician for assessment and possible treatment for MUPS. The study's CONSORT diagram is presented in Fig. 1. Between March 2014 and February 2016, 187 potential participants were referred to a Medically Unexplained Symptoms hospital outpatient clinic. 57 patients were contacted to conduct a more detailed assessment of eligibility for the study. SSRD diagnoses and information on medical, psychiatric, personal history, and also demographic factors were established at the baseline assessment using the Structured Clinical Interview for DSM Disorders 5th Edition Research Version (SCID 5-RV) [25] administered by a trained research assistant. Rating reliability was established prior to recruitment. Comorbid psychiatric diagnoses were determined using the SCID-RV Screening Modules. Eligible participants were aged 18–65 years; met DSM-5 criterion A-C for SSRD (Somatic Symptom Disorder, Illness Anxiety Disorder or Conversion Disorder) as assessed by the SCID-5-RV. In addition, participants were required to score above a clinical cutoff for number of somatic symptoms (>3 symptoms for men and > 5 for women using the SOMS). Patients were excluded if they had active suicidality, cognitive impairment, current psychosis, bipolar disorder, or substance related and addictive disorder; or complaints considered to be factitious; or if patients were already receiving ongoing psychological treatment; or they were unable to give informed consent to treatment. Of the 57 patients assessed, 20 did not meet inclusion criteria or declined participation and were excluded.

1.3. Randomization and allocation

The study research assistant conducted the screening assessment and study enrollment. Patients were allocated to treatment group in a 1:1 ratio. A researcher external to the study team generated a permuted block randomization sequence using a digital random number generator. An administrative assistant independent to the study performed the allocation at the end of enrollment.

1.4. Intervention protocol

1.4.1. Intensive short-term dynamic psychotherapy

The ISTDP model [26,27] is an emotion focused brief format of psychotherapy that helps the patient identify and address emotional contributors that exacerbate and perpetuate mental health issues. Treatment was provided according to published recommendations (Abbass, 2015). Patients presenting to the ED typically are neither orientated to psychological processes, or seeking psychotherapy, therefore early appointments were focused on establishing a treatment rationale. This involved identifying and addressing any conscious barriers to engagement in psychological assessment and intervention. There was then a specific focus on collaboratively examining the possible role of emotional contributors to the patient's somatic symptoms. This involved focusing on the visceral bodily experiencing of emotions in-session when the patient is asked about interpersonal exchanges. Patients are assisted to differentiate their responses as feelings that should be experienced and understood, or either bodily manifestations of anxiety, or habitual cognitive, affective or behavioral means of distracting from underlying feelings. According to ISTDP theory, manifestations of unconscious bodily anxiety connected to activation of the central nervous system, can culminate in somatic symptoms (e.g., voluntary muscle tightening in the chest walls can mirror non-organic chest pain). Patterns of cognitive ruminations about bodily symptoms and illness worry can be understood to function in part as avoidance of emotions.

The first session was 2- to 3-h to allow time for engaging patients in the assessment process and for history taking. The research protocol outlined that up to one therapy session per week could be provided for 8 weeks, up to a maximum of 20 weeks thereafter. Weekly sessions lasted 50–60 min in duration. The initial 8-session structure was chosen to line up with the 8 week wait-list. Termination in fewer sessions was based upon agreement between therapist and patient.

Therapists providing ISTDP were two clinical psychologists and one psychiatrist, all experienced ISTDP clinicians (mean experience practicing ISTDP 14 years, range 6–22). Treatment integrity was ensured by weekly review of videotapes and consideration of manualized recommendations by the team of therapists.

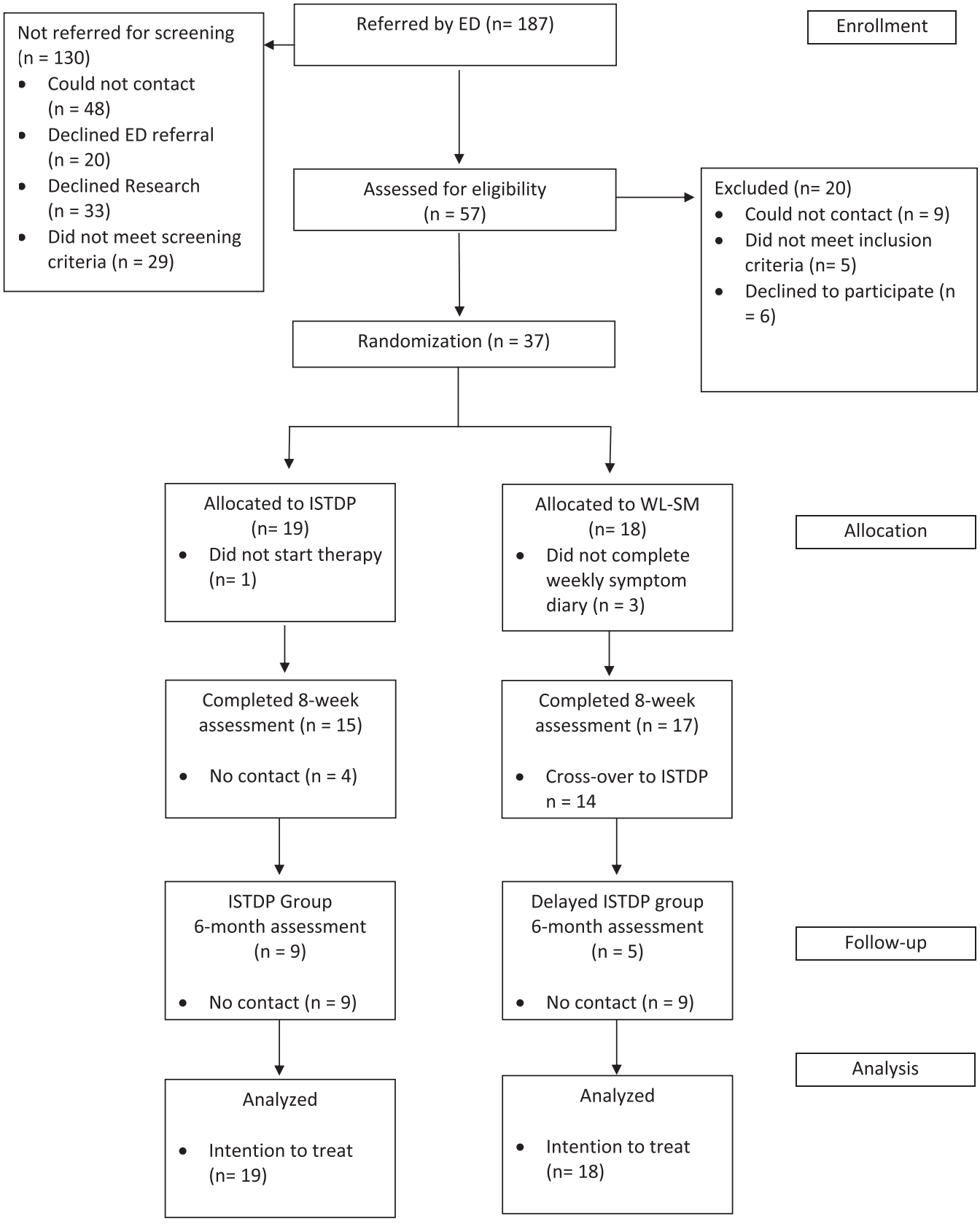

Fig. 1. CONSORT Diagram of patient flow through Halifax Somatic Symptom Study.

1.4.2. Medical care as usual

Medical Care as Usual (MCAU) was selected to control for both the role of the initial ED consultation, where patients were orientated to the role of MUPS, as well as subsequent naturalistic ED care and family doctor care. All participants were advised that care would continue to be provided to them by the ED as needed and to continue to contact their family physician for additional routine care.

Education on the occurrence of SSRD and MUPS in EDs has historically been provided on an annual basis to physicians in the EDs. This involved information on the identification of common somatic presentations that may be associated to emotional dysregulation, and how to access the hospital-based Medically Unexplained Symptoms Clinic [21]. Referring physicians were therefore acquainted with principles around reattributing patients' presenting somatic distress as a possible manifestation of bodily stress.

1.4.3. Wait-list symptom monitoring (WL-SM)

A wait-list comparison was selected to account for the passage of time, the natural emergence and reduction in symptoms before further intervention, as well as the effects of weekly symptom monitoring. Participants were given questionnaires and encouraged to complete these each week as a means of tracking and actively observing their somatic symptoms and possible contributors. They were contacted at 4 and 8 weeks to complete the battery of assessment questionnaires.

1.5. Outcome measures

1.5.1. Primary outcome measures

Somatic symptom severity (Screen for Somatoform Disorder-7 day, SOMS-7) [28]. The SOMS-7 is based on the DSM-IV and ICD-10, consisting of 47 physical symptoms. Patients complete this self-report form based upon the severity of their symptoms in the past 7 days on a 5-point likert scale. Internal consistency in the current data across the weekly measurement points was high (alpha = 0.948).

1.5.2. Secondary outcome measures

Patient-Health Questionnaire (PHQ-9) [29] was administered as a patient self-report measure for assessing depressive symptoms. The internal consistency for the measure across the weekly measurement points was high (alpha = 0.912).

Whitley Index (WI-7) [30] health anxiety is a 7-item patient self-report measure of belief and fear about health illness and the presentation of physical bodily sensations relating to physical illness. The internal consistency for the measure in the current data across all timepoints was high (alpha = 0.931).

Inventory of Interpersonal Problems (IIP-32) is a 32-item self-report measure containing 32 items measuring degree of difficulty and distress concerning interpersonal relationships. The internal consistency for the measure in the current data across all timepoints was high (alpha = 0.904).

The presence of somatic symptom and related disorders was assessed using the Structured Clinical Interview for DSM Disorders Version 5, Research Version conducted by a trained research assistant.

One deviation from the initial trial registration is noted. Due to an administrative oversight, the SF-12 was not removed from the list of secondary outcome measures. This questionnaire was not administered so no data is available.

1.5.3. Service utilization

ED service utilization was measured by calculating the difference in the number of ED visits over a 1-year and 2-year time-period, starting prior to, and post ISTDP treatment. This was gathered by an external researcher using hospital electronic records covering all regional ED. As this outcome was not listed in the trial registration as a pre-specified outcome, analyses will be considered exploratory.

1.5.4. Treatment integrity

All ISTDP sessions were video-recorded and used to rate adherence to core psychodynamic techniques using the Comparative Psychotherapy Process Scale (CPPS) [31]. Where available, sessions 1, 4, 10 and 16 were rated on the CPPS. This validated measure generates a scale score of how characteristic the therapist interventions are of a psychodynamic-interpersonal (PI) model and a cognitive-behavioral (CB) model. Two trained independent evaluators, blind to session number, generated CPPS ratings. Both evaluators attended 24 h of training to establish reliability; during training, 10 psychotherapy tapes were independently rated and scores compared with pre-established expert ratings. Evaluators demonstrated satisfactory inter-rater reliability prior to data collection and coding drift was minimized through regular meetings with the CPPS instructor. At least half of sessions were rated by both evaluators and the average score of ratings used within subsequent analyses.

To examine the extent to which ED physicians adhered to the reattribution model of somatic symptom management, for the purposes of this study a 19-item participant self-report measure was written and administered at baseline. Items were scores on a 7-point likert scale with higher ratings indicating higher reattribution.

1.5.5. Predictor and moderator variables

The 30-item Relationship Scales Questionnaire (RSQ-30) [32] is a valid and reliable self-administered measure that differentiates between 3 distinct models of adult attachment, secure, avoidant and anxious. The RSQ-30 is made up of 30-items rated on a 5-point likert scale that ask participants to rate their characteristic style in close relationships. The RSQ-30 was internally consistency in this study ($\alpha = 0.770$).

The Toronto Alexithymia Scale (TAS-20) is a self-report measure used to assess the degree to which patients understand, process, and describe emotions. The convergent, discriminant and concurrent validity of the TAS-20 have been shown to be good [33]. The TAS-20 was internally consistency in this study ($\alpha = 0.872$).

1.6. Statistics

Independent *t*-test, Mann-Whitney *U* test and Chi-Square tests were first carried out, as appropriate, to examine the equivalence of demographic variables in the treatment condition and WL-SM group.

Longitudinal multilevel analyses were performed using SPSSv27 using the MIXED function for repeated measures, with Maximum Likelihood estimation used to fit the models. This method provides a full intention to treat by making use of all available data. It provides unbiased estimates in the presence of missing data by assuming that they are missing at random, which is the least restrictive assumption [34]. Analyses included Time, Group and Time x Group interaction as fixed factors, and a random intercept. For all analyses, the $p < .05$ level of statistical significance was applied using two-tailed tests. 95% confidence intervals and effect sizes using Cohen's *d* are reported. Between-group effect sizes were calculated using the pre-post controlled effects formula, using estimated means and the pooled observed SDs of both groups at baseline [35]. Within group ES were calculated by dividing the pre-post differences in estimated means by the pooled observed SDs (see Table 2: †), controlling for intercorrelation of scores [36]. Effect sizes were interpreted as small ($d = 0.20$ to 0.49), medium ($d = 0.50$ to 0.79), and large ($d \geq 0.80$) [37].

Exploratory analyses, investigating potential patient predictor and moderators of changes in somatic symptoms (SOMS-7 scores baseline to week 8), used longitudinal mixed-models with potential moderators included as fixed effects. The final model included a two-way interaction (Time x Moderator) to test for a predictor effect across all patients, and a three-way interaction (Time x Group x Moderator) tested for a moderator effect that differentially affected the rate of change in the ISTDP group vs. WL-SM group. Effect sizes (Cohen's d) were calculated using the *F*-test for mixed effects models [38].

Table 2
Between-group effects from linear mixed-effects models for intention-to-treat sample.†

Measure	Time	Estimate	SE	95% CI		Cohen's *d* (95% CI)
SOMS-7	Baseline – Week 8	3.70*	0.89	1.89	5.52	0.94 (0.23, 1.65)
	Baseline – End Tx	1.91**	0.59	0.71	3.10	1.54 (0.70, 2.37)
PHQ-9	Baseline – Week 8	3.32*	0.87	1.56	5.08	1.04 (0.28, 1.80)
	Baseline – End Tx	3.53*	0.80	1.92	5.15	1.09 (0.36, 1.83)
WI-7	Baseline – Week 8	3.01**	0.89	1.20	4.82	0.92 (0.27, 1.57)
	Baseline – End Tx	3.97*	0.88	2.18	5.76	1.17 (0.48, 1.86)
IIP-32	Baseline – Week 8	0.02	0.08	−0.13	0.18	0.14 (−0.38, 0.66)
	Baseline – End Tx	0.11	0.08	−0.05	0.27	0.37 (−0.24, 0.98)

SOMS-7, screening for somatic symptoms scale; PHQ-9, Patient health questionnaire for depression; WI-7, whitely index; IIP-32, inventory of interpersonal problems.

† Effect size computed using estimated marginal means, and the SD of the outcome variable from the observed data at the respective timepoint. *P < .001; **$p < .005$.

2. Results

Participants reported an average somatic symptom duration of 8.6 years. The majority had persistent symptoms (89%) and approximately half rated these as 'severe' (49%). The average scores on the WI-7 (23.46) and PHQ-9 (13.87) indicated clinically significant levels of illness anxiety and 'moderate' depression respectively. Table 1 summarises participant baseline characteristics. Statistical comparisons did not find any significant group baseline differences in demographic characteristics, however, the ISTDP group had higher levels of somatic symptoms and illness anxiety. In Phase 1, thirty-seven patients participated in the trial and were included in the intention to treat (ITT) analysis: 19 were randomized to receive 'immediate' ISTDP and 18 to the 8-week WL-SM. Due to funding, the recruitment phase lasted 2 years with the first participant recruited in March 2014 and the final follow-up assessment was in December 2016. Participants randomized to ISTDP, over the initial 8 weeks, received a mean of 5.6 sessions (SD = 2.6). Nine participants continued treatment and over the course of 20 weeks received on average 9.8 sessions (SD = 7.5). In Phase 2, at the end of the randomization phase, 14 patients in the WL-SM group were then provided 'delayed' ISTDP sessions (mean = 6.9, SD = 7.8). The combined sample of patients who received ISTDP ('immediate' and 'delayed') totalled 33 patients, who received on average 8.6 sessions (SD = 7.6).

2.1. Treatment integrity

A total of 71 sessions (25%) were rated using the CPPS, of which 46 sessions (16%) were double rated. Mean inter-rater reliability values were in the 'excellent' range (≥0.75) (Shout and Fleiss, 1979) on both the PI subscale (ICC: 2:2 = 0.997) and CB subscale (ICC: 2:2 = 0.976).

Ratings on the PI scale (mean = 2.11, SD = 0.82) were significantly greater than for the CB scale (mean = 0.51, SD = 0.18) indicating that ISTDP was more characteristic of a psychodynamic therapy than a cognitive-behavioral model ($t = 18.128$, $p < .001$). ISTDP was also characterized by a focus on emotional expression and experiencing: the highest item scores were noted for PI item-8 ("The therapist encourages the patient to experience and express feelings in the session"; mean = 4.32, SD = 1.12); and PI item-1 ("The therapist encourages the exploration of feelings regarded by the patient as uncomfortable e.g., anger, sadness"; mean = 3.30, SD = 1.50).

Table 1
Demographic variables and clinical characteristics by experimental group.

	ISTDP (*N* = 19)		WL-SM (*N* = 18)		TOTAL (*N* = 37	
Demographic Variables	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*
Age (years)	38.0	12.6	39.6	15.0	38.8	13.7
	N	*%*	*N*	*%*	*N*	*%*
Female	15	79	17	94	32	87
White	18	95	17	94	35	95
Married	9	47	5	28	14	38
Living with one or more person	15	79	18	100	33	89
In employment	11	58	13	72	28	65
University Education	5	26	2	11	7	19
Clinical Characteristics	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*
Baseline SOMS-7	64.3	37.3	54.9	20.8	59.7	30.3
Baseline WI-7	25.7	7.3	21.1	5.0	23.5	6.6
Baseline PHQ-9	14.3	7.0	13.4	5.0	13.9	6.1
SSRD Duration (Years)	6.4	7.9	10.9	11.3	8.6	9.8
Somatic Symptom Specifier	*N*	*%*	*N*	*%*	*N*	*%*
Somatic Symptom Disorder	11	58	15	83	26	70
Illness Anxiety Disorder	6	32	3	17	9	24
Conversion Disorder	2	11	0	0	2	5
Predominantly Pain	15	79	13	72	28	76
Persistent	17	90	16	89	33	89
Severity - Mild	2	11	4	22	6	16
Moderate	7	37	6	17	13	35
Severe	10	53	8	44	18	49
Comorbid Axis I Disorder	*N*	*%*	*N*	*%*	*N*	*%*
Major Depression	6	32	3	17	9	24
Panic Disorder	17	90	15	83	32	87
Agoraphobia	4	21	10	56	14	38
Social Anxiety	2	11	3	17	5	14
Specific Phobia	1	5	1	6	2	5
Generalized Anxiety Disorder	16	84	13	72	29	78
Any Eating Disorder	3	16	2	11	5	14

ISTDP, Intensive Short-Term Dynamic Psychotherapy; SM-W/L, Symptom Monitoring Wait-List group; SOMS-7, screening for somatic symptoms scale; PHQ-9, Patient health questionnaire for depression; WI-7, whitely index; SSRD, somatic symptom and related disorder.

Participants' mean self-report ratings, 84.7 (SD = 29.2), suggest ED physicians used a somatic symptom reattribution approach in ED consultations.

2.2. Phase 1: RCT outcomes

2.2.1. Primary outcomes

ITT analyses (See Table 2 and 3) revealed a significant Time x Group interaction $B = 3.704$, $p < .001$ on SOMS-7 change from baseline to 8 weeks, and at the end of treatment, $B = 1.906$, $p = .003$, with a large between-group effects at 8 weeks ($d = 0.94$), further increased at end of treatment ($d = 1.54$). This result supported our hypothesis that the improvements in somatic symptoms in the MCAU plus ISTDP group would be greater compared to that of a MCAU plus WL-SM group.

At the end of treatment, of the MCAU plus ISTDP group, 12/19 (63%) achieved at least 50% reduction in SOMS-7 and 11/19 no-longer met diagnostic criteria for SSD (58%). This compared to 2/18 (11%) showing 50% SOM-7 reduction and 1/18 (6%) not meeting SSD diagnostic criteria in the MCAU plus WL-SM group. The difference in the proportion of patients in each group evidencing 50% reduction (χ^2 (2) = 10.65, $p < .001$) and no-longer fulfilling SSD diagnostic criteria (χ^2 (2) = 11.56, $p < .001$) was statically significant.

2.2.2. Secondary outcomes

ITT analyses (See Table 2 and 3) showed a statistically significant

Table 3
Effect sizes (Cohen's *d*) for group differences in outcomes at each time point.

Outcome measure	Time point	ISTDP N = 19		SM-W/L N = 18		Pooled SD	Cohen's *d*	95% CI for Cohen's *d*	
		mean†	SD	mean†	SD				
SOMS-7	Baseline	60.86	36.79	47.45	20.80	30.10	–	–	–
	Week 4	42.39	25.98	43.79	26.01		0.47	−0.18	1.12
	Week 8	23.92	26.12	40.13	21.81		0.94	0.23	1.65
	End treatment	5.25	11.00	40.13	21.81		1.54	0.70	2.37
PHQ-9	Baseline	14.34	7.02	12.74	5.03	6.13	–	–	–
	Week 4	10.48	6.38	12.21	5.78		0.52	0.04	1.00
	Week 8	6.63	7.33	11.67	5.43		1.04	0.28	1.80
	End treatment	6.26	6.46	11.67	5.43		1.09	0.36	1.83
WI-7	Baseline	25.74	7.26	20.81	5.04	6.28	–	–	–
	Week 4	22.27	6.87	20.36	7.43		0.46	0.01	0.91
	Week 8	18.81	7.04	19.91	6.60		0.92	0.27	1.57
	End treatment	17.14	6.66	19.91	6.60		1.17	0.48	1.86
IIP-32	Baseline	1.56	0.64	1.37	0.54	0.59	–	–	–
	Week 4	1.44	0.50	1.33	0.49		0.10	−0.27	0.48
	Week 8	1.30	0.64	1.30	0.49		0.14	−0.38	0.66
	End treatment	1.30	0.50	1.30	0.49		0.37	−0.24	0.98

ISTDP, Intensive Short-Term Dynamic Psychotherapy; SM-W/L, Symptom Monitoring Wait-List group; SOMS-7, screening for somatic symptoms scale; PHQ-9, Patient health questionnaire for depression; WI-7, whitely index; IIP-32, inventory of interpersonal problems.

Time x Group interaction at the 8-week timepoint on PHQ-9, $B = 3.320$, $p < .001$, and WI-7, $B = 3.010$, $p = .002$, in favour of MCAU plus ISTDP. Effect sizeswere large, $d = 1.04$ (PHQ-9), $d = 0.92$ (WI-7). At the end of treatment, analyses showed a statistically significant Time x Group interaction on PHQ-9, $B = 3.532$, $p < .001$, and WI-7, $B = 3.974$, $p < .001$, in favour of the group receiving ISTDP. The between group effect sizes were large $d = 1.09$ (PHQ-9), $d = 1.17$ (WI-7). Changes in interpersonal problems favoured ISTDP but were not statistically significant and remained small at the end of treatment ($d = 0.37$)

2.3. Phase 2: Combined ISTDP group data and follow-up

Pre to post-treatment changes (See Table 4 and 5) in the combined ISTDP sample demonstrated statistically significant improvements on all measures: SOMS-7, $B = -18.265$, $p < .001$; PHQ-9, $B = -3.83$, $p < .001$; WI-7, $B = -4.32$, $p < .001$; IIP-32, $B = -0.21$, $p < .01$. The within-group effect sizes were large for the respective outcomes at the end of treatment (SOMS-7, $d = 1.61$; PHQ-9, $d = 1.22$; WI-7, $d = 1.69$; IIP-32, $d = 1.04$) and maintained or increased at 6-month follow-up (SOMS-7, $d = 1.61$; PHQ-9, $d = 1.67$; WI-7, $d = 2.07$; IIP-32, $d = 1.16$).

2.4. Adverse events

Adverse events were monitored by the study team. One participant required brief hospitalisation for symptoms of depression and another required treatment for borderline personality disorder. Both participants were in the WL-SM plus MCAU group. Neither were adjudged to be related to study procedures.

Table 5
Within-group effects from linear mixed-effects models for combined ISTDP group intention-to-treat sample.

Measure	Mean (SD)			Effect size (95% CI)	
	Baseline	End-treatment	6-month f/u	Baseline – End-treatment	Baseline- 6-month f/u
SOMS-7	61.12 (30.89)	24.14 (20.05)	18.29 (16.33)	1.61** (1.07–2.14)	1.61** (1.08–2.15)
PHQ-9	13.52 (6.27)	6.19 (5.82)	4.86 (5.10)	1.22** (0.69–1.74)	1.67** (1.12–2.21)
WI-7	23.85 (6.64)	15.11 (6.77)	13.71 (6.70)	1.69** (1.15–2.24)	2.07** (1.50–2.64)
IIP-32	1.49 (0.60)	1.08 (0.54)	0.94 (0.66)	1.04* (0.54–1.54)	1.16* (0.65–1.68)

*$P < .05$, ** $p < .001$.
ISTDP, Intensive Short-Term Dynamic Psychotherapy; SOMS-7, screening for somatic symptoms scale; PHQ-9, Patient health questionnaire for depression; WI-7, whitely index; IIP-32, inventory of interpersonal problems.

2.5. ED service use outcome

In the combined sample of patients who received ISTDP ($N = 33$), the total mean number of ED visits in the 12- and 24-month time-period prior to treatment was 3.9 (SD = 4.2) and 5.6 (SD = 6.4) respectively.

Table 4
Within-group effects from linear mixed-effects models for intention-to-treat sample.

		Mean (SD)			Effect size (95% CI)	
	Measure	Baseline	Week 8	End treatment	Baseline - Week 8	Baseline - End treatment
ISTDP	SOMS-7	65.00 (36.79)	27.27 (24.81)	25.13 (20.13)	1.33** (2.02–0.65)	1.37** (2.05–0.69)
	PHQ-9	14.32 (7.02)	7.4 (7.33)	6.93 (6.46)	1.08** (0.40–1.76)	1.21** (0.52–1.90)
	WI-7	25.68 (7.26)	18.29 (7.04)	16.29 (6.66)	1.26** (0.56–1.94)	1.65** (0.94–2.36)
	IIP-32	1.54 (0.64)	1.40 (0.64)	1.24 (0.50)	0.35 (−0.28–1.00)	0.86* (0.21–1.51)
W/L-SM	SOMS-7	54.89 (20.80)	43.35 (21.14)	–	0.41 (−0.25–1.07)	–
	PHQ-9	13.39 (5.03)	12.31 (5.42)	–	0.21 (−0.45–0.86)	–
	WI-7	21.11 (5.04)	19.87 (6.60)	–	0.19 (−0.46–0.85)	–
	IIP-32	1.40 (0.54)	1.37 (0.49)	–	0.27 (−0.38–0.93)	–

*P < .05, ** p < .001.
ISTDP, Intensive Short-Term Dynamic Psychotherapy; SM-W/L, Symptom Monitoring Wait-List group; SOMS-7, screening for somatic symptoms scale; PHQ-9, Patient health questionnaire for depression; WI-7, whitely index; IIP-32, inventory of interpersonal problems.

Post ISTDP, the total mean number of ED visits reduced to 1.1 (SD = 2.1), at 12 months follow-up, $t = 3.764$, $p < .001$, and 2.5 (SD = 3.0) at 24 months follow-up, $t = 2.988$, $p = .005$.

2.6. Predictors and Moderators of RCT outcomes

2.6.1. Attachment style

Tables 6 shows the multilevel estimates from the final models. (i) Attachment anxiety: The analyses of Time x RSQ ANX indicated that greater self-reported anxiety predicted greater improvements in SOMS ($p = .002$; $d = 0.81$). When these results were plotted by treatment group (see Fig. 2a), these effects appear to be most prominent in patients who received ISTDP. The three-way moderator analysis showed these observed group differences approached the magnitude of a moderate effect ($d = 0.47$) but failed to reach the level of statistical significance ($p = .17$). (ii) Attachment avoidance: The two-way interaction (Time x RSQ AVO) was significant ($p = .04$) with a moderate effect ($d = 0.53$). The three-way interaction of Time x Group x RSQ AVO showed a statistical trend ($p = .07$) equivalent to a moderate sized effect ($d = 0.53$). Fig. 2b shows that the WL-SM group had similar SOMS symptoms at week 8 regardless of degree of attachment avoidance. In contrast, patients who reported high attachment avoidance and received ISTDP, showed greater improvements in SOMS compared to those who reported lower level of avoidance.

2.6.2. Alexithymia

The two-way interaction (Time x Baseline Alexithymia) and three-way interaction (Time x Baseline Alexithymia x Group) showed a not statistically significant medium sized effect respectively ($d = 0.55$, $p = .11$; d = 0.53, $p = .14$). This suggested, patients receiving ISTDP reporting high levels of alexithymia at baseline, demonstrated greater improvements in SOMS at week 8 (see Fig. 2c).

3. Discussion

We aimed to conduct what we believe is the first RCT of a psychotherapy intervention for ED patients with SSRD. After 8 weeks, patients who received ISTDP alongside MCAU showed significant improvements in somatic symptoms compared to W/L-SM plus MCAU. With additional ISTDP sessions, patients continued to make further gains, demonstrating large between-group effects in somatic symptoms, illness anxiety and depression. These positive outcomes are particularly noteworthy in a sample of non-treatment seeking patients, who on average had chronic symptoms and comorbid mental health diagnoses, and are notoriously challenging to engage and treat [39].

In comparison to two previous RCTs examining ISTDP for MUPS (Chavooshi, 2016, 2017), similar large treatment effects were seen post-treatment. The current study also required participants meet specific psychological symptoms, fulfilling DSM-5 SSRD diagnosis. Further research is required to examine potential differences in patient characteristics and treatment outcomes for MUPS patients meeting full SSRD criteria. Differences may also exist between patients presenting at medical services (e.g., hospital ED) with SSRD compared to mental health settings, impacting engagement in psychological therapy [40]. This study included all patients with MUPS even when they attributed symptoms to medical causes and insight into psychological contributors appeared to be low. This could account for the attrition rates seen in the current study. The small within-group effects seen in the WL-SM plus MCAU group matches our clinical experience that patients who present at EDs with acute somatic symptoms, experience some natural symptom remission in early weeks, possibly due to consultation with emergency physicians [41].

Two published RCTs of SSD and Illness Anxiety report large improvements in illness anxiety following internet-based CBT [42,43] but neither measured change in somatic symptoms. Previous research on functional somatic conditions has consistently reported only small to moderate improvements in pain and somatic distress [11,12]. The current trial reports evidence of large changes in illness anxiety, alongside a 57.9% response rate in somatic symptoms, following ISTDP. This compares favorably to response rates reported in a recent high quality RCT for MUPS comparing CBT plus emotion regulation training (45.7%) and traditional CBT (31.3%) [44].

When evaluating the effects of psychological therapies for the collection of SSRD, there is limited evidence of reduced service utilization. A meta-analysis of 18 RCTS of CBT studies reported weak benefits in reducing healthcare use in MUPS [45]. The current findings of significant reductions in ED visits pre to post ISTDP are relevant and replicate previously published findings [21,46].

Exploratory analyses offer partial support for an explanatory model of somatic symptoms that accounts for patient attachment style and alexithymia as potential prescriptive factors. Although *p*-values representing differences between outcomes across treatment group were not statistically significant and analyses were underpowered, it has been argued that this should not define a moderating variable [47]. Effect sizes for treatment differences suggest that further research is needed to examine if ISTDP may be more effective for patients with somatic symptom and related disorders who report higher levels of attachment anxiety, attachment avoidance and alexithymia. A possible interpretation of the current findings is that ISTDP targets the role of these patient traits associated to impaired emotion processing. In addition, patients who potentially have sufficient psychological insight into their own tendencies towards emotional avoidance, in contrast to those who report low levels of alexithymia, attachment anxiety and avoidance, may be more likely to benefit from a psychotherapy approach for somatic symptom that purports to address these putative mechanisms of change [40].

3.1. Limitations and further research

This preliminary clinical trial benefits from the use of a randomized group design conducted in a naturalistic ED setting. This ensured the effects of medical care, passage of time, and the impact of symptom monitoring and assessment were controlled. Although the large treatment effects seen appear to be attributable to ISTDP, a priori power analyses were not conducted therefore these results should be interpreted with caution. The study sample included a high proportion of Caucasian females which may limit the generalizability of the findings. Moderation analyses were exploratory and require validation with a larger sample to guide treatment selection. Study limitations include the small sample size, the reliance on patient self-report measures for evaluating treatment efficacy, and missing data. It was not considered ethical to have a lengthy wait-list comparison, thus the long-term effects of ISTDP could not be compared against the control comparison. However, the sample reported on average moderate to severe physical symptoms that had persisted for multiple years and SSRD is a chronic condition, so it seems unlikely that the large magnitude of improvements would have been achieved without ISTDP.

In conclusion, this preliminary RCT supports the use of ISTDP as a transymptomatic treatment for this challenging to treat population. Embedded access to psychological treatment within routine medical speciality services, such as hospital ED, appears to be an effective way of reducing health utilization and potentially minimizing patient exposure to iatrogenic effects of multiple investigations. Given the positive treatment effects found, this trial of ISTDP should be replicated within a larger randomized SSRD sample.

CRediT authorship contribution statement

Joel M. Town: Writing – review & editing, Writing – original draft, Project administration, Methodology, Investigation, Formal analysis, Conceptualization. **Allan Abbass:** Writing – review & editing. **Samuel Campbell:** Writing – review & editing.

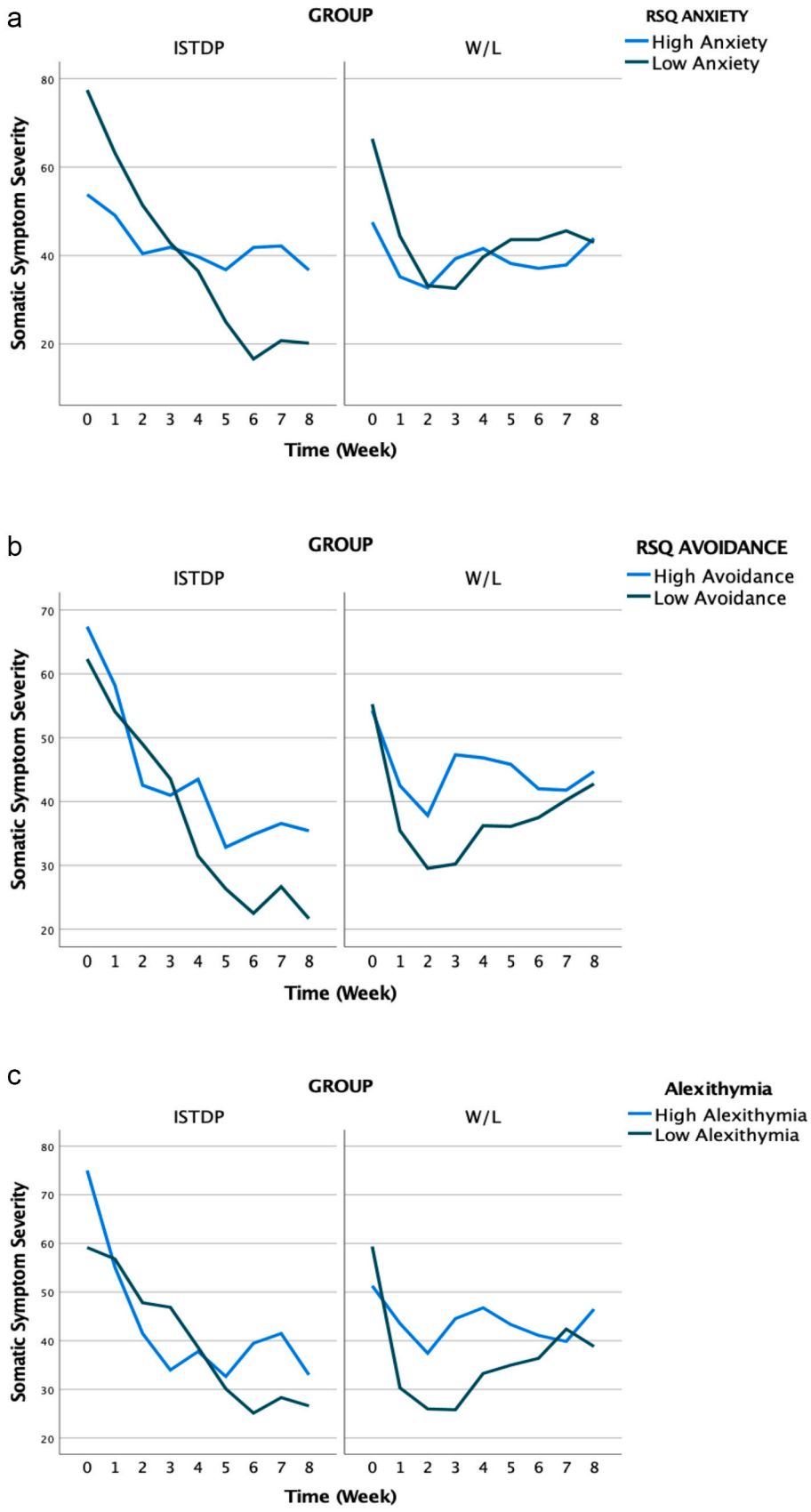

Fig. 2. Change in SOMS-7 by patient characteristics and treatment group.

Table 6
Linear mixed-effects models for the relation between patient characteristics and SOMS-7 scores from baseline to week 8.

Patient Characteristics	Estimate	SE	*df*	*F*	*P*	95% CI		Cohen's *d*
RSQ Anxiety								
Intercept	6.25	52.68	38.48	0.014	0.91	−100.39	112.88	
Time	1.51	4.25	34.60	0.126	0.73	−7.11	10.13	
RSQ ANX	13.58	20.17	38.58	0.178	0.68	−51.63	78.79	
Group	26.94	20.17	38.47	1.783	0.19	−13.88	67.76	
Time x Group	0.32	2.57	34.58	0.016	0.90	−4.90	5.55	
Time x RSQ ANX	−3.84	1.62	34.17	5.625	0.02	−7.13	−0.55	0.81
Group x RSQ ANX	−11.16	12.36	38.72	0.815	0.37	−36.16	13.85	
Time x group x RSQ ANX	1.38	0.99	34.67	1.95	0.17	−0.63	3.39	0.47
RSQ Avoidance								
Intercept	78.83	37.12	38.42	1.352	0.04	3.72	153.94	
Time	−1.60	3.29	35.22	0.089	0.63	−8.28	5.09	
RSQ AVO	−1.46	12.71	38.55	0.209	0.38	−73.29	28.60	
Group	−22.35	25.18	38.62	0.008	0.91	−27.16	24.25	
Time x Group	0.09	2.16	33.35	0.316	0.97	−4.31	4.48	
Time x RSQ AVO	−2.52	1.15	37.17	2.633	0.04	−4.84	−0.19	0.53
Group x RSQ AVO	2.75	8.80	38.81	0.017	0.76	−15.05	20.55	
Time x group x RSQ AVO	1.43	0.77	33.98	2.345	0.07	−0.13	3.00	0.53
Alexithymia								
Intercept	80.95	69.62	37.88	1.352	0.25	−60.01	221.90	
Time	1.94	6.47	33.51	0.089	0.77	−11.22	15.10	
Group	−20.91	45.73	37.89	0.209	0.65	−113.49	71.68	
TAS	−0.10	1.12	37.97	0.008	0.93	−2.37	2.18	
Time x Group	−2.30	4.10	32.07	0.316	0.58	−10.65	6.04	
Time x TAS	−0.17	0.11	34.58	2.633	0.11	−0.38	0.04	0.55
Group x TAS	0.10	0.75	38.03	0.017	0.90	−1.42	1.62	
Time x Group x TAS	0.10	0.07	32.83	2.345	0.14	−0.03	0.24	0.53

SOMS-7, screening for somatic symptoms scale; RSQ ANX, Relationship scale questionnaire anxiety subscale; RSQ AVO, Relationship scale questionnaire avoidance subscale; TAS, Toronto alexithymia scale.

Declaration of competing interest

We have no conflicts of interest to disclose. This research was supported by the Department of Psychiatry and Nova Scotia Health Authority.

References

[1] American Psychiatric Association D, Association AP, Diagnostic and statistical manual of mental disorders: DSM-5, American Psychiatric Association, Washington, DC, 2013.
[2] J. Pasic, J. Russo, P. Roy-Byrne, High utilizers of psychiatric emergency services, Psychiatr. Serv. 56 (2005) 678–684.
[3] J. Moe, S.W. Kirkland, E. Rawe, et al., Effectiveness of interventions to decrease emergency department visits by adult frequent users: a systematic review, Acad. Emerg. Med. 24 (2017) 40–52.
[4] F. Althaus, S. Paroz, O. Hugli, et al., Effectiveness of interventions targeting frequent users of emergency departments: a systematic review, Ann. Emerg. Med. 58 (41–52) (2011) e42.
[5] G.S. Kumar, R. Klein, Effectiveness of case management strategies in reducing emergency department visits in frequent user patient populations: a systematic review, J. Emerg. Med. 44 (2013) 717–729.
[6] C.N. Lam, S. Arora, M. Menchine, Increased 30-day emergency department revisits among homeless patients with mental health conditions, West. J. Emerg. Med. 17 (2016) 607.
[7] L.J. Soril, L.E. Leggett, D.L. Lorenzetti, T.W. Noseworthy, F.M. Clement, Characteristics of frequent users of the emergency department in the general adult population: a systematic review of international healthcare systems, Health Policy 120 (2016) 452–461.
[8] L.M. McAndrew, L.A. Phillips, D.A. Helmer, et al., High healthcare utilization near the onset of medically unexplained symptoms, J. Psychosom. Res. 98 (2017) 98–105.
[9] N.L.T. Andersen, L.F. Eplov, J.T. Andersen, C.R. Hjorthøj, M. Birket-Smith, Health care use by patients with somatoform disorders: a register-based follow-up study, Psychosomatics 54 (2013) 132–141.
[10] A.N. Johnston, M. Spencer, M. Wallis, et al., Interventions for people presenting to emergency departments with a mental health problem: a systematic scoping review, Emerg. Med. Austral. 31 (2019) 715–729.
[11] M. Kleinstäuber, M. Witthöft, W. Hiller, Efficacy of short-term psychotherapy for multiple medically unexplained physical symptoms: a meta-analysis, Clin. Psychol. Rev. 31 (2011) 146–160.
[12] N. Van Dessel, M. Den Boeft, J.C. van der Wouden, et al., Non-pharmacological interventions for somatoform disorders and medically unexplained physical symptoms (MUPS) in adults, Cochrane Database Syst. Rev. (11) (2014) CD011142.
[13] M.A. Lumley, H. Schubiner, N.A. Lockhart, et al., Emotional awareness and expression therapy, cognitive behavioral therapy, and education for fibromyalgia: a cluster-randomized controlled trial, Pain 158 (2017) 2354–2363.
[14] B.C. Yarns, M.A. Lumley, J.T. Cassidy, et al., Emotional awareness and expression therapy achieves greater pain reduction than cognitive behavioral therapy in older adults with chronic musculoskeletal pain: a preliminary randomized comparison trial, Pain Med. 21 (2020) 2811–2822.
[15] A. Abbass, J. Town, H. Holmes, et al., Short-term psychodynamic psychotherapy for functional somatic disorders: a meta-analysis of randomized controlled trials, Psychother. Psychosom. 89 (2020) 363–370.
[16] B. Chavooshi, M. Saberi, S.A. Tavallaie, H. Sahraei, Psychotherapy for medically unexplained pain: a randomized clinical trial comparing intensive short-term dynamic psychotherapy and cognitive-behavior therapy, Psychosomatics 58 (2017) 506–518.
[17] B. Chavooshi, P. Mohammadkhani, B. Dolatshahee, Efficacy of intensive short-term dynamic psychotherapy for medically unexplained pain, Psychother. Psychosom. 85 (2016) 123–125.
[18] B. Chavooshi, P. Mohammadkhani, B. Dolatshahee, Telemedicine vs. in-person delivery of intensive short-term dynamic psychotherapy for patients with medically unexplained pain: a 12-month randomized, controlled trial, J. Telemed. Telecare 23 (2017) 133–141.
[19] J.M. Town, E. Driessen, Emerging evidence for intensive short-term dynamic psychotherapy with Persoanlity disorders and somatic disorders, Psychiatr. Ann. 43 (2013) 502–507.
[20] A.T. Abbass, J. M, S. Kisely, Intensive short-term dynamic psychotherapy for pain, J. Anesthesiol. Pain Therap. 3 (2022) 4–7.
[21] A. Abbass, S. Campbell, K. Magee, R. Tarzwell, 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 11 (2009) 529–534.
[22] P. Luyten, B. Van Houdenhove, A. Lemma, M. Target, P. Fonagy, Vulnerability for functional somatic disorders: a contemporary psychodynamic approach, J. Psychother. Integr. 23 (2013) 250.
[23] S.A. Billingham, A.L. Whitehead, S.A. Julious, An audit of sample sizes for pilot and feasibility trials being undertaken in the United Kingdom registered in the United Kingdom clinical research network database, BMC Med. Res. Methodol. 13 (2013) 104.
[24] F. Faul, E. Erdfelder, A. Buchner, A.-G. Lang, Statistical power analyses using G* power 3.1: tests for correlation and regression analyses, Behav. Res. Methods 41 (2009) 1149–1160.
[25] M.B. First, J.B. Williams, R.S. Karg, R.L. Spitzer, Structured Clinical Interview for DSM-5 Disorders- Patient Edition (SCID-RV/P), Comubia University: Biometrics Research Department, 2013.
[26] H. Davanloo, Intensive Short-Term Dynamic Psychotherapy, Wiley, Chichester, 2000.
[27] H. Davanloo, Unlocking the Unconscious: Selected Papers of Habib Davanloo, Wiley, Chichester, 1990.

[28] W. Rief, W. Hiller, A new approach to the assessment of the treatment effects of somatoform disorders, Psychosomatics 44 (2003) 492–498.
[29] K. Kroenke, R.L. Spitzer, The PHQ-9: a new depression diagnostic and severity measure, Psychiatr. Ann. 32 (2002) 509–521.
[30] P. Fink, H. Ewald, J. Jensen, et al., Creening for somatization and hypochondriasis in primary care and neurological in-patients: a seven-item scale for hypochondrias and somatization, J. Psychosom. Res. 46 (1999) 261–273.
[31] M.J. Hilsenroth, M.D. Blagys, S.J. Ackerman, D.R. Bonge, M.A. Blais, Measuring psychodynamic-interpersonal and cognitive-behavioral techniques: development of the comparative psychotherapy process scale, Psychother. Theory Res. Pract. Train. 42 (2005) 340.
[32] D.W. Griffin, K. Bartholomew, The metaphysics of measurement: The case of adult attachment, in: K. Bartholomew, D. Perlman (Eds.), Advances in Personal Relationships: Vol5 Attachment Processes in Adulthood, Jessica Kingsley Publishers, London, 1994, pp. 17–52.
[33] R.M. Bagby, G.J. Taylor, J.D. Parker, The twenty-item Toronto Alexithymia Scale–II. Convergent, discriminant, and concurrent validity, J. Psychosom. Res. 38 (1994) 33–40.
[34] C.K. Enders, Analyzing longitudinal data with missing values, Rehabil. Psychol. 56 (2011) 267.
[35] S.B. Morris, Estimating effect sizes from pretest-posttest-control group designs, Organ. Res. Methods 11 (2008) 364–386.
[36] D. Lakens, Calculating and reporting effect sizes to facilitate cumulative science: a practical primer for t-tests and ANOVAs, Front. Psychol. 4 (2013).
[37] J. Cohen, Quantitative methods in psychology: a power primer, Psychol. Bull. 112 (1992) 1155–1159.
[38] G. Verbeke, Linear Mixed Models for Longitudinal Data. Linear Mixed Models in Practice, Springer, 1997, pp. 63–153.
[39] J. Moe, E.Y. Wang, M.J. McGregor, et al., People who make frequent emergency department visits based on persistence of frequent use in Ontario and Alberta: a retrospective cohort study, Canadian Med. Assoc. Open Access J. 10 (2022) E220–E231.
[40] J.M. Town, V. Lomax, A.A. Abbass, G. Hardy, The role of emotion in psychotherapeutic change for medically unexplained symptoms, Psychother. Res. 29 (2019) 86–98.
[41] D. Stephenson, J. Price, Medically unexplained physical symptoms in emergency medicine, Emerg. Med. J. 23 (2006) 595–600.
[42] E. Hedman, E. Axelsson, E. Andersson, M. Lekander, B. Ljotsson, Exposure-based cognitive–behavioural therapy via the internet and as bibliotherapy for somatic symptom disorder and illness anxiety disorder: randomised controlled trial, Br. J. Psychiatry 209 (2016) 407–413.
[43] J.M. Newby, J. Smith, S. Uppal, E. Mason, A.E. Mahoney, G. Andrews, Internet-based cognitive behavioral therapy versus psychoeducation control for illness anxiety disorder and somatic symptom disorder: a randomized controlled trial, J. Consult. Clin. Psychol. 86 (2018) 89.
[44] M. Kleinstäuber, C. Allwang, J. Bailer, et al., Cognitive behaviour therapy complemented with emotion regulation training for patients with persistent physical symptoms: a randomised clinical trial, Psychother. Psychosom. 88 (2019) 287–299.
[45] B. Jones, de C Williams AC., CBT to reduce healthcare use for medically unexplained symptoms: systematic review and meta-analysis, Br. J. Gen. Pract. 69 (2019) e262–e269.
[46] A. Abbass, S. Kisely, D. Rasic, J.M. Town, R. Johansson, Long-term healthcare cost reduction with intensive short-term dynamic psychotherapy in a tertiary psychiatric service, J. Psychiatr. Res. 64 (2015) 114–120.
[47] H.C. Kraemer, T. Wilson, C.G. Fairburn, W.S. Agras, Mediators and moderators of treatment effects in randomized clinical trials, Arch. Gen. Psychiatry 59 (2002) 877–883.