Article

A Randomized Controlled Trial of 7-Day Intensive and Standard Weekly Cognitive Therapy for PTSD and Emotion-Focused Supportive Therapy

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Objective: Psychological treatments for posttraumatic stress disorder (PTSD) are usually delivered once or twice a week over several months. It is unclear whether they can be successfully delivered over a shorter period of time. This clinical trial had two goals: to investigate the acceptability and efficacy of a 7-day intensive version of cognitive therapy for PTSD and to investigate whether cognitive therapy has specific treatment effects by comparing intensive and standard weekly cognitive therapy with an equally credible alternative treatment.

Method: Patients with chronic PTSD (N=121) were randomly allocated to 7-day intensive cognitive therapy for PTSD, 3 months of standard weekly cognitive therapy, 3 months of weekly emotion-focused supportive therapy, or a 14-week waiting list condition. The primary outcomes were change in PTSD symptoms and diagnosis as measured by independent assessor ratings and self-report. The secondary outcomes were change in disability, anxiety, depression, and quality of life. Evaluations were conducted at the baseline assessment and at 6 and 14 weeks (the posttreatment/wait assessment). For groups receiving treatment, evaluations were also conducted at 3 weeks and follow-up assessments at 27 and 40 weeks after randomization. All analyses were intent-to-treat.

Results: At the posttreatment/wait assessment, 73% of the intensive cognitive therapy group, 77% of the standard cognitive therapy group, 43% of the supportive therapy group, and 7% of the waiting list group had recovered from PTSD. All treatments were well tolerated and were superior to waiting list on nearly all outcome measures; no difference was observed between supportive therapy and waiting list on quality of life. For primary outcomes, disability, and general anxiety, intensive and standard cognitive therapy were superior to supportive therapy. Intensive cognitive therapy achieved faster symptom reduction and comparable overall outcomes to standard cognitive therapy.

Conclusions: Cognitive therapy for PTSD delivered intensively over little more than a week was as effective as cognitive therapy delivered over 3 months. Both had specific effects and were superior to supportive therapy. Intensive cognitive therapy for PTSD is a feasible and promising alternative to traditional weekly treatment.

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A range of trauma-focused psychological treatment programs are effective for posttraumatic stress disorder (PTSD) (1–3). Such treatments are usually delivered once or twice per week over the course of several months. While this is a conventional psychotherapy format, it has some potential disadvantages from a patient perspective. PTSD interferes with social and occupational functioning and it could be desirable to make more rapid progress. Furthermore, some patients find it difficult to commit to protracted psychological treatment (2). This raises the question of whether trauma-focused psychological treatment for PTSD is effective and acceptable if condensed into a shorter period of time. There is some evidence that intensive cognitive-behavioral therapy is effective in other anxiety disorders (4, 5), but it remains unclear whether it is feasible for PTSD. Some clinicians are concerned about the risk of symptom exacerbation in the treatment of PTSD (6, 7), and it is conceivable that a concentrated treatment delivery could enhance the risk of possible adverse effects.

This clinical trial had two goals. First, we investigated the acceptability and efficacy of an intensive 7-day version of cognitive therapy for PTSD (8). Standard weekly cognitive therapy for PTSD over 3 months has been shown to be highly effective and acceptable to patients (9–13). A pilot study suggested that intensive cognitive therapy for PTSD may also be effective (8). Second, we tested whether cognitive therapy for PTSD has specific treatment effects by comparing intensive and standard weekly cognitive therapy with an alternative active treatment, emotion-focused supportive psychotherapy, using a broad range of outcomes

including PTSD symptoms, disability, anxiety, depression, and quality of life. Cognitive therapy for PTSD has been shown to be superior to self-help interventions with limited therapist contact (9), but it has not yet been compared with an equally credible alternative psychological treatment involving the same amount of therapist contact.

Method

Participants

Individuals (N=121) were recruited between 2003 and 2008 from consecutive referrals to a National Health Service outpatient clinic for anxiety disorders in South London, U.K. (N=81) or a research clinic at the University of Oxford, U.K. (N=40). Patients were invited to participate if they met the following inclusion criteria: they were between 18 and 65 years old, met diagnostic criteria for chronic PTSD as determined by the Structured Clinical Interview for DSM-IV (14), their intrusive memories were linked to one or two discrete traumatic events in adulthood, and PTSD was the main problem. Exclusion criteria were history of psychosis, current substance dependence, borderline personality disorder, acute serious suicide risk, or if treatment could not be conducted without the aid of an interpreter. Figure 1 depicts the patient flow chart and Table 1 summarizes the details on trauma and the clinical, demographic, and treatment characteristics. No group differences were observed in any of the variables. Seventy-one patients (58.7%) were women, and 36 (29.8%) were from ethnic minorities. The most common index traumas were interpersonal violence (physical or sexual assault, 37.2%), accidents or disaster (38.0%), or traumatic death of others (7.4%). Most patients (71.9%) had a history of other traumas besides their index traumas. The majority (63.6%) had other comorbid axis I disorders (mainly mood and anxiety disorders or substance abuse), and 19.8% had axis II disorders (mainly obsessive-compulsive, depressive, paranoid, or avoidant disorders). Around one-third (36.7%) had had previous treatment for PTSD. Patients taking psychotropic medication (29.8%) were required to be on a stable dosage for 2 months before random assignment.

Random Allocation and Masking

If the patients were suitable for the trial and willing to participate, they signed the informed consent form. The participants were then randomly allocated to one of the four trial conditions by an independent researcher who was not involved in assessing patients using the minimization procedure (15) to stratify for sex and severity of PTSD symptoms. The assessors determining the suitability of a patient for inclusion were not informed about the stratification variables and algorithm. The assessments of treatment outcome were conducted by independent evaluators without knowledge of the patient's treatment condition. Patients were asked not to reveal their group assignment to the evaluators. Participants were not blind to the nature of the treatment, but care was taken to create similarly positive expectations in each treatment group by informing them that several psychological treatments were effective in PTSD and it was unknown which worked best, and by giving a detailed rationale for the treatment condition to which the patient was allocated. Patient ratings of treatment credibility (16) and therapeutic alliance scores (17) were high in all treatment conditions and did not differ (Table 1).

Treatment Conditions

Patients in all treatment conditions received up to 20 hours of treatment by the 14-week assessment (posttreatment/wait). The sessions were spread evenly over 3 months for standard cognitive therapy and supportive therapy, whereas the main part of treatment occurred within the first 7–10 days for intensive cognitive therapy. The number of treatment or booster sessions received did not differ between the treatment groups (Table 1).

Standard cognitive therapy for PTSD. This treatment was delivered as in previous trials (9, 10) in up to 12 weekly individual sessions over the course of 3 months, with three optional monthly booster sessions over the following 3 months. The treatment follows Ehlers and Clark's model of PTSD (18) and aims to reduce the patient's sense of current threat by 1) identifying and modifying excessively negative appraisals of the trauma and/or its sequelae, 2) elaborating the trauma memory and discriminating triggers of intrusive reexperiencing, and 3) reducing the use of cognitive strategies and behaviors (such as thought suppression, rumination, and safety-seeking behaviors) that maintain the problem. Therapists followed a treatment manual (19). A description of treatment procedures is found at http://oxcadat.psy.ox.ac.uk/downloads/CT-PTSD%20Treatment%20Procedures.pdf/view. Patients were given homework assignments to complete between sessions.

Seven-day intensive cognitive therapy for PTSD. This treatment followed the same protocol as standard cognitive therapy, but the main part of the treatment was delivered over a much shorter period of time. In the intensive treatment phase, patients received up to 18 hours of therapy over a period of 5–7 working days. Treatment days usually comprised a morning and an afternoon session lasting 90 minutes to 2 hours, with a break for lunch. Up to two further sessions were conducted 1 week and 1 month after the intensive period to discuss progress and homework assignments, and up to three optional monthly booster sessions were available. Patients receiving intensive cognitive therapy completed homework assignments parallel to those in standard cognitive therapy. However, during the intensive phase homework was more limited because of time constraints.

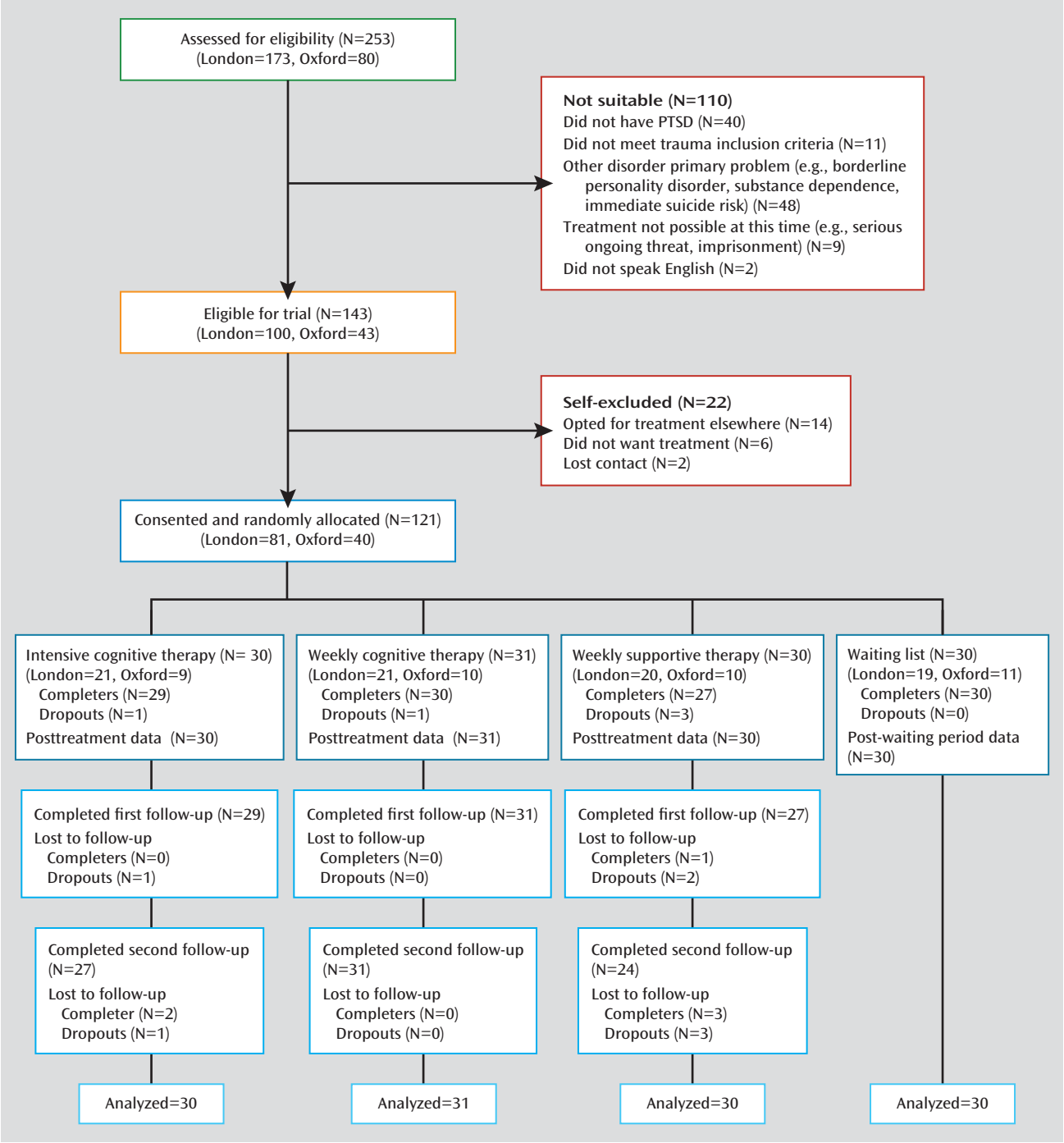
Emotion-focused supportive therapy. This nondirective treatment focused on patients' emotional reactions rather than their cognitions. It was designed to provide a credible therapeutic alternative to control for nonspecific therapeutic factors so that observed effects of cognitive therapy could be attributed to its specific effects beyond the benefits of good therapy. Like standard cognitive therapy, it comprised up to 12 weekly individual sessions (up to 20 hours in total) over 3 months with three optional monthly booster sessions. Therapists followed a manual that specified procedures, building on similar treatment programs (20, 21). After normalizing PTSD symptoms, the therapist gave the rationale that the trauma had left the patient with unprocessed emotions and that therapy would provide them with support and a safe context to address their unresolved emotions. Patients could freely choose what problems to discuss in the session, including any aspect of the trauma. Therapists helped patients clarify their emotions and solve problems. They did not restructure the patient's appraisals, attempt to elaborate their trauma memories or discriminate triggers, or direct them in how to change their behavior. As homework, patients kept a daily diary of their emotional responses to the events of the week that was discussed in the following session (20).

Waiting list. Patients allocated to the waiting list condition waited for 14 weeks before receiving treatment.

Outcome Measures

Data were collected from all participants, including dropouts. The primary assessment points were at baseline (pretreatment or assignment to waiting list), 6 weeks (self-reports only), and 14

FIGURE 1. Flow Diagram of Patient Recruitment and Trial Progress in a Study of Cognitive and Supportive Therapies for PTSD



weeks (posttreatment/wait). Follow-ups for treated patients were at 27 and 40 weeks after random treatment assignment. Figure 1 depicts the number of patients who provided data at each assessment point. In addition, patients receiving therapy also completed self-reports of PTSD symptoms, anxiety, and depression at 3 weeks.

Primary Outcome Measures

Clinician-rated PTSD symptoms. Independent assessors (trained psychologists) interviewed patients with the Clinician-Administered PTSD Scale (CAPS) (22). The CAPS assesses the frequency and severity of each of the PTSD symptoms specified in DSM-IV. Interrater reliability for a PTSD diagnosis was kappa=0.95, and r=0.98 for the total severity score (37 interviews, 14 interviewers, and 14 raters).

Severity of PTSD symptoms. Patients completed the Posttraumatic Diagnostic Scale (23), a self-report questionnaire measuring the overall severity of PTSD symptoms (score range, 0–51) that has shown good reliability and concurrent validity with other PTSD measures.

TABLE 1. Sample, Trauma, and Treatment Characteristics by Treatment Condition in a Study of Cognitive and Supportive Therapies for PTSD

Characteristics	Intensive Cognitive Therapy (N=30)		Standard Weekly Cognitive Therapy (N=31)		Supportive Therapy (N=30)		Waiting List (N=30)	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Age (years)	39.7	12.4	41.5	11.7	37.8	9.9	36.8	10.5
	N	%	N	%	N	%	N	%
Sex								
Female	18	60.0	18	58.1	17	56.7	18	60.0
Male	12	40.0	13	43.9	13	43.4	12	40.0
Ethnic group								
Caucasian	22	73.3	20	64.5	22	73.3	21	70.0
Ethnic minority	8	26.7	11	35.5	8	26.7	9	30.0
Marital status								
Never married	9	30.0	10	32.3	12	40.0	10	33.3
Divorced/separated/widowed	3	10.0	4	12.9	4	13.4	5	16.7
Married/cohabitating	18	60.0	17	54.8	14	46.7	15	50.0
Education								
College/university	6	20.0	8	25.8	8	26.7	10	33.3
High school examination (age 18)	1	3.3	6	19.4	6	20.0	6	20.0
Standard school examination (age 16)	18	60.0	12	38.7	12	40.0	13	43.3
None	5	16.7	5	16.1	4	13.3	1	3.3
Current employment								
Unemployed	7	23.3	7	22.6	9	30.0	5	16.7
On disability/retired	2	6.7	3	9.7	3	10.0	3	10.0
Sick leave	7	23.3	3	9.7	5	16.7	4	13.3
Working full- or part-time	14	46.7	18	58.1	13	43.3	18	60.0
Profession								
Professional	5	17.2	4	12.9	6	20.0	6	20.7
White collar	8	27.6	17	54.8	7	23.3	12	41.4
Blue collar	10	34.5	6	19.4	10	33.3	6	20.7
Homemaker/student/not working	6	20.6	4	12.9	7	23.3	5	17.2
Traumas								
Type of main traumatic event								
Interpersonal violence	12	40.0	12	38.7	11	36.7	10	33.3
Accidents/disaster	11	36.7	11	35.5	14	46.7	10	33.3
Death/harm to others	2	6.7	1	3.2	2	6.7	4	13.3
Other	5	16.7	7	22.6	3	10.0	6	20.0
Time since main traumatic event								
3 months – 1 year	10	33.3	14	45.2	8	27.8	14	46.7
1–2 years	10	33.3	5	16.1	7	24.1	6	20.0
2–4 years	7	23.3	11	35.5	8	27.6	3	10.0
>4 years	3	10.0	1	3.2	6	20.7	7	23.3
History of other trauma								
Yes	22	63.3	21	67.7	23	76.7	20	66.7
No	8	26.7	10	32.3	7	23.3	10	33.3
Reported history of childhood abuse								
Yes	5	16.7	2	6.5	4	13.3	3	10.0
No	25	83.3	29	93.5	26	86.7	27	90.0
Comorbidity								
Anxiety disorder								
Yes	10	33.3	7	22.6	10	33.3	10	33.3
No	20	66.7	24	77.4	20	66.7	20	66.7
Depressive disorder								
Yes	12	40.0	7	22.6	11	36.7	14	46.7
No	18	60.0	24	77.4	19	63.3	16	53.3
Substance abuse								
Yes	6	20.0	6	19.4	6	20.0	2	6.7
No	24	80.0	25	80.6	24	80.0	28	93.3

continued

TABLE 1. Sample, Trauma, and Treatment Characteristics by Treatment Condition in a Study of Cognitive and Supportive Therapies for PTSD (*continued*)

Characteristics	Intensive Cognitive Therapy (N=30)		Standard Weekly Cognitive Therapy (N=31)		Supportive Therapy (N=30)		Waiting List (N=30)	
History of substance dependence								
Yes	2	6.7	4	12.9	2	6.7	1	3.3
No	28	93.3	27	87.1	28	93.3	29	96.7
Axis II disorder								
Yes	7	23.3	5	16.1	4	13.3	8	26.7
No	23	76.7	26	83.9	26	86.7	22	73.3
Treatment history								
Previous treatment for PTSD								
Yes	10	33.3	11	35.5	12	40.0	11	36.7
No	20	66.7	20	64.5	18	60.0	19	63.3
Psychotropic medication pretreatment								
Yes	5	16.7	11	35.5	12	40.0	8	26.7
No	25	83.3	20	64.5	18	60.0	22	73.3
Changes in medication								
Discontinued before 14 weeks	1	20.0	5	45.5	3	25.0	2	25
in follow-up	1	20.0	1	9.1	3	25.0	–	–
Stayed on medication	3	60.0	5	45.5	6	50.0	6	75
Started medication during study	0	0	0	0	0	0	0	0
Other psychological treatment during study								
Trauma-related	0	0	0	0	1	3.3	0	0
For other problems	0	0	1	3.2	0	0	0	0
Treatment received in trial	Mean	SD	Mean	SD	Mean	SD		
Number of sessions								
Before 14 weeks	10.13	2.18	10.10	3.26	10.27	3.21		
Booster	1.90	0.80	2.07	1.46	2.20	1.32		
Treatment credibility	23.63	4.40	24.29	4.60	22.00	5.12		
Therapeutic alliance								
Patient rating	5.94	0.56	5.70	0.68	5.53	0.51		
Therapist rating	5.69	0.47	5.74	0.40	5.67	0.48		

Secondary Outcome Measures

Disability. Patients completed the Sheehan Disability Scale (24) and rated the interference caused by their symptoms in their work, social life and leisure activities, and family life and home. The disability score was the sum of the ratings (score range, 0–30).

General anxiety and depression. Symptoms of anxiety and depression were assessed with the Beck Anxiety Inventory (25) and the Beck Depression Inventory (BDI) (26), standard 21-item self-report measures with high reliability and validity (score range, 0–63).

Quality of life. Perceived quality of life was assessed with the Quality of Life Enjoyment and Satisfaction Questionnaire (27). This scale assesses the patient's satisfaction in 14 life domains and has been shown to be reliable and valid in clinical and community samples (28).

Therapist Training and Treatment Fidelity

The therapists were qualified clinicians who had completed a clinical psychology (AH, NG, JW, IA) or nurse therapist (SL, AD) degree and had received further training in all treatments used in this study. They had treated at least two individuals with each of the therapy protocols under supervision before treating trial patients. They received weekly supervision from a senior clinician (AE, AH, NG) trained in all treatment modalities for weekly cases, and daily supervision for intensive cases to ensure compliance with the treatment protocols.

To further evaluate treatment integrity, a randomly selected recording from each patient was reviewed by a trained assessor for compliance with the treatment protocol, using a detailed checklist of procedures used. Only one minor deviation was discovered: one of the supportive therapy patients worked on spotting memory triggers for a few minutes. Another randomly selected session from each patient was rated for therapist competency. Cognitive therapy sessions were rated by a psychologist experienced in cognitive therapy using an adapted version of the Cognitive Therapy Scale (29), on a scale from 0 to 6. A score of 3 is considered satisfactory, and scores ≥4 indicate good-to-excellent competency. The mean score was 4.7 (SD=0.41) for standard cognitive therapy and 4.8 (SD=0.35) for intensive cognitive therapy ($p>0.18$). Supportive therapy sessions were evaluated for therapist competency by a counseling psychologist experienced in supportive therapy (on a scale from 0 to 6 with anchors as above, informed by ratings of dimensions of good nondirective therapy such an empathic understanding) (30). The mean rating was 4.7 (SD=0.49).

Data Analysis

All analyses were intention-to-treat using all 121 randomly assigned participants. Dichotomous outcomes were compared with chi-square tests. Continuous outcomes were analyzed with hierarchical linear modeling (31). This analysis models random

TABLE 2. Dichotomous Measures of Response to Treatment in a Study of Cognitive and Supportive Therapies for PTSD

	1: Intensive Cognitive Therapy (N=30)		2: Standard Cognitive Therapy (N=31)		3: Supportive Therapy (N=30)		4: Waiting List (N=30)		Analysis		
Variable[a]	N	%	N	%	N	%	N	%	χ^2	df	Significant Contrasts
Dropouts	1	3.3	1	3.2	3	10	0	0	0.26	3, 121	
Symptom deterioration											
Self-reports (PDS)	0	0	0	0.0	1	3.3	0	0.0	3.06	3, 121	
Assessor-rated (CAPS)	0	0	1	3.2	3	10.0	6	20.0	9.31*	3, 121	1, 2<4
Loss of diagnosis (CAPS)											
Posttreatment/wait (14 weeks)	22	73.3	24	77.4	13	43.3	2	6.7	38.92***	3, 121	1, 2>3 > 4
Follow-up 1 (27 weeks)	22	73.3	23	74.2	11	36.7		N/A	11.70**	2, 91	1, 2>3
Follow-up 2 (40 weeks)	20	66.7	23	74.2	12	40.0		N/A	8.18*	2, 91	1, 2>3
Total remission (assessor-rated, CAPS)											
Posttreatment or wait (14 weeks)	14	46.7	16	51.6	6	20.0	1	3.3	22.19***	3, 121	1, 2>3>4
Follow-up 1 (27 weeks)	12	40.0	21	67.7	5	16.7		N/A	16.41***	2, 91	1, 2>3
Follow-up 2 (40 weeks)	16	53.3	23	74.2	8	26.7		N/A	13.84**	2, 91	1, 2>3
Total remission (self-report, PDS)											
Posttreatment or wait (14 weeks)	17	56.7	20	64.5	9	30.0	1	3.3	29.53***	3, 121	1, 2>3>4
Follow-up 1 (27 weeks)	15	50.0	22	71.0	7	23.3		N/A	13.90**	2, 91	1, 2>3
Follow-up 2 (40 weeks)	17	56.7	18	58.1	9	30.0		N/A	6.05*	2, 91	1, 2>3

[a] CAPS=Clinician-Administered PTSD Scale; PDS=Posttraumatic Diagnostic Scale.
* $p<0.05$. ** $p<0.01$. *** $p<0.001$.

slopes and intercepts for participants and tests the fixed effects of treatment condition and repeated assessments over time, using data from all participants. Differential treatment efficacy shows in significant interactions between treatment condition and time. Significant overall effects were followed up with contrasts between conditions. All variables were centered for the analysis (32). Significance levels were set at $p<0.05$ (two-tailed). To test whether the three treatment conditions led to better outcomes than the waiting list, linear trends for symptom change over assessments points from baseline to 6 weeks and 14 weeks were compared between the four trial conditions. To compare the efficacy of the three treatment conditions, hierarchical linear modeling compared symptom scores from baseline to the 40-week follow-up, fitting linear and quadratic trends for symptom change over the five assessments (baseline and 6, 14, 27, and 40 weeks). Interactions of site, sex, medication status, and trauma type with condition and time were explored in additional analyses, but as effects were far from significant, these were omitted from the final models.

For comparison with meta-analyses, we report Cohen's d effect sizes (33) for adjusted between-group differences (controlling for pretreatment scores) and confidence intervals at posttreatment. Effect sizes ≥0.5 are considered medium effects and ≥0.8 are considered large effects. To compare the speed of recovery between the treated groups, a further analysis compared symptom scores on the Posttraumatic Diagnostic Scale, the Beck Anxiety Inventory, and the BDI at 3 weeks for the treatment groups, controlling for initial symptom severity. Effect sizes for within-group changes in symptom scores between the pretreatment and posttreatment/wait assessments were calculated as Cohen's d statistic (33), using the pooled standard deviation as reference, which is more conservative in estimating improvement than using pretreatment standard deviations.

Recovery from PTSD diagnosis according to the CAPS was coded if the patient no longer met the minimum number of symptoms in each symptom cluster required by DSM-IV, with a score of at least 1 for both frequency and intensity and a global severity score of at least 2 (9–11). Recovery was determined for all randomly assigned participants. The status of a few participants with missing CAPS observations was based on the Posttraumatic Diagnostic Scale (if available for this time point) or the last available value on the CAPS. In addition, for comparisons with other research (21), we calculated the percentages of patients who were totally remitted according to assessor ratings and self-report, using cutoffs recommended in the respective manual: a CAPS score of below 20 ("asymptomatic") and a Posttraumatic Diagnostic Scale score below 11. PTSD symptom deterioration was defined using established cutoffs for statistically reliable change, i.e., symptom increases greater than 6.15 on the Posttraumatic Diagnostic Scale (34) and greater than 10 on the CAPS (21).

Sample size was determined by power analysis on the basis of effect sizes for cognitive therapy observed in previous trials. A group size of N=30 per condition yields 85% power for an effect size of 0.8.

Results

Adverse Effects, Dropouts, and Symptom Deterioration

No adverse effects (i.e., negative reactions to treatment procedures such as significant increases in dissociation, suicidal intent, or hyperarousal) were reported in any of the groups. Dropouts were defined as attending fewer than eight sessions (35), unless earlier completion was agreed with the therapist. Dropout rates were low and did not differ between conditions (Table 2). Only one patient in the supportive therapy group reported symptom deterioration on the Posttraumatic Diagnostic Scale (Table 2). On the CAPS, fewer patients treated with intensive and cognitive therapy were rated as having symptom deterioration than those in the waiting list condition. The supportive therapy group did not statistically differ from the other groups.

TABLE 3. Intent-to-Treat Results for Continuous Primary and Secondary Outcome Measures

Measure[a]	Intensive Cognitive Therapy (N=30)		Standard Cognitive Therapy (N=31)		Supportive Therapy (N=30)		Waiting List (N=30)	
Primary outcomes	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Independent assessor (CAPS)								
Baseline	78.72	19.80	70.60	13.45	74.60	15.39	69.95	14.17
14 weeks (posttreatment)	32.22	27.20	26.97	28.68	47.88	31.77	65.28	20.64
27 weeks (follow-up 1)	35.56	26.26	20.86	25.23	49.32	32.46		
40 weeks (follow-up 2)	35.33	35.11	20.96	27.71	49.04	38.01		
Self-report (PDS)								
Baseline	33.21	7.66	32.44	6.94	34.26	7.40	32.46	7.60
6 weeks	14.85	8.92	16.33	11.58	23.30	12.90	31.92	6.84
14 weeks (posttreatment)	11.98	9.60	9.39	10.88	19.98	13.67	29.24	9.36
27 weeks (follow-up 1)	13.91	11.63	10.15	11.86	18.93	12.98		
40 weeks (follow-up 2)	13.03	13.99	9.63	11.26	20.94	15.40		
Secondary outcomes								
Disability (SDS)								
Baseline	20.48	5.55	21.39	5.11	19.65	6.97	17.28	7.74
6 weeks	10.72	7.51	14.02	9.35	16.60	7.90	17.22	6.67
14 weeks (posttreatment)	9.30	8.20	10.02	9.76	14.28	9.09	17.20	6.38
27 weeks (follow-up 1)	10.61	8.80	8.68	9.50	13.67	9.86		
40 weeks (follow-up 2)	9.72	9.22	9.37	10.07	14.47	11.35		
Anxiety (BAI)								
Baseline	26.23	13.12	28.42	14.17	25.12	11.31	23.57	9.12
6 weeks	13.55	12.16	13.88	14.01	17.01	13.30	23.26	10.88
14 weeks (posttreatment)	11.57	11.94	9.24	12.09	16.35	14.56	22.13	10.59
27 weeks (follow-up 1)	10.37	11.59	9.63	13.71	15.50	13.74		
40 weeks (follow-up 2)	11.85	13.35	9.00	12.61	15.99	16.15		
Depression (BDI)								
Baseline	23.93	9.86	21.90	10.77	26.18	10.68	23.47	8.96
6 weeks	14.34	9.30	13.39	10.70	19.79	12.42	21.26	8.06
14 weeks (posttreatment)	12.10	9.97	11.07	11.80	17.00	12.82	20.85	10.02
27 weeks (follow-up 1)	12.03	11.25	10.54	12.70	16.29	12.10		
40 weeks (follow-up 2)	12.84	12.54	9.44	12.18	18.60	14.05		
Quality of life								
Baseline	36.93	12.84	39.36	21.87	38.78	18.40	45.68	20.98
6 weeks	49.54	17.23	57.49	20.82	44.86	25.25	41.74	15.13
14 weeks (posttreatment)	52.67	20.21	62.93	21.70	49.22	24.97	46.75	19.00
27 weeks (follow-up 1)	58.10	22.78	60.43	23.31	49.61	25.67		
40 weeks (follow-up 2)	54.57	20.74	65.11	22.46	50.38	25.53		

[a] CAPS=Clinician-Administered PTSD Scale; PDS=Posttraumatic Diagnostic Scale; SDS=Sheehan Disability Scale; BDI=Beck Depression Inventory; BAI=Beck Anxiety Inventory.

Comparison of Treatment Conditions With Waiting List Condition

Table 2 summarizes the recovery rates for the treatment and waiting list conditions. All treatment conditions were more likely to lead to recovery from PTSD diagnosis than the waiting list. Intensive and standard cognitive therapy had excellent number-needed-to-treat statistics of 1.50 (95% confidence interval [CI]=1.18–2.06) and 1.41 (95% CI=1.14–1.87), respectively. For supportive therapy, the number needed to treat was 2.73 (95% CI=1.77–5.95). Similar results were obtained for assessor-rated and self-reported total remission.

Table 3 summarizes the results for the continuous outcome measures. We observed significant condition-by-time interactions ($p<0.002$ in all cases) for all primary and secondary outcome measures: PTSD symptoms as measured by CAPS ($F=21.50$, df=3, 135.35) and the Posttraumatic Diagnostic Scale ($F=21.16$, df=3, 106.56) (see also Figure 2); disability ($F=14.01$, df=3, 109.86); anxiety ($F=13.57$, df=3, 106.85); depression ($F=5.16$, df=3, 122.20); and quality of life ($F=6.96$, df=3, 106.85). All contrasts between treatment conditions and the waiting list were significant (except for quality of life between supportive therapy and waiting list), indicating greater improvement for intensive and standard cognitive therapy and supportive therapy compared with waiting list. As summarized in Table 4, pre-post effect sizes (Cohen's d) for both intensive and standard cognitive therapy revealed a very large improvement in PTSD symptoms and disability and large improvements in anxiety, depression, and quality of life.

TABLE 4. Within- and Between-Group Cohen's d Effect Sizes at the 14-Week Assessment (Posttreatment/Wait) and Adjusted Intent-to-Treat Group Differences

Comparison and Measure[a]	Intensive Cognitive Therapy			Standard Weekly Cognitive Therapy			Supportive Therapy			Waiting List
Within-group pre-post effect sizes			d			d			d	d
PTSD symptoms (CAPS)			1.95			1.95			1.07	0.26
PTSD symptoms (PDS)			2.45			2.53			1.30	0.38
Disability			1.60			1.50			0.66	0.01
Anxiety			1.17			1.46			0.67	0.15
Depression			1.19			0.96			0.78	0.28
Quality of life			0.93			1.08			0.48	0.05
Between-group effect sizes	Adjusted Difference	95% CI	d	Adjusted Difference	95% CI	d	Adjusted Difference	95% CI	d	d
Waiting list and										
PTSD symptoms (CAPS)	39.55***	26.60–52.51	1.57	38.80***	26.19–51.40	1.55	20.84**	8.06–33.61	0.84	
PTSD symptoms (PDS)	17.72***	12.54–22.90	1.75	19.84***	14.71–24.97	1.96	10.35***	5.15–15.54	1.02	
Disability	9.96***	6.10–13.81	1.33	9.82***	5.95–13.68	1.30	4.45*	0.62–8.28	0.59	
Anxiety	11.98***	6.54–17.43	1.13	15.48***	10.04–20.91	1.45	6.61*	1.18–12.05	0.62	
Depression	9.04***	4.26–13.81	0.97	8.81***	4.06–13.55	0.95	5.54*	0.75–10.34	0.59	
Quality of life	–12.43**	–21.28 to –3.58	0.73	–20.67***	–29.39 to –11.95	1.21	–7.98	–16.79 to 0.83	0.47	
Supportive therapy and										
PTSD symptoms (CAPS)	18.72**	5.96–31.45	0.75	17.96**	5.31–30.62	0.72				
PTSD symptoms (PDS)	7.37**	2.19–12.55	0.73	9.49***	4.34–14.64	0.94				
Disability	5.51**	1.71–9.31	0.74	5.37**	1.59–9.15	0.72				
Anxiety	5.37*	0.06–10.80	0.51	8.86**	3.46–14.27	0.83				
Depression	3.49	–1.30 to 8.28	0.37	3.26	–1.50 to 8.05	0.35				
Quality of life	–4.45	–13.17 to 4.28	0.26	–12.69**	–21.33 to –4.04	0.74				
Standard weekly cognitive therapy and										
PTSD symptoms (CAPS)	0.76	–12.06 to 13.57	0.03							
PTSD symptoms (PDS)	–2.12	–7.26 to 3.02	0.21							
Disability	0.14	–3.63 to 3.91	0.02							
Anxiety	–3.49	–8.89 to 1.90	0.33							
Depression	0.23	–4.52 to 4.98	0.02							
Quality of life	8.24	–0.42 to 16.90	0.48							

[a] CAPS=Clinician-Administered PTSD Scale; PDS=Posttraumatic Diagnostic Scale.
* $p<0.05$. ** $p<0.01$. *** $p<0.001$.

Comparison of Treatment Conditions

At the posttreatment and follow-up assessments, more patients receiving intensive and standard cognitive therapy had recovered from a PTSD diagnosis than patients receiving supportive therapy (Table 2). Similar results were obtained for assessor-rated and self-reported total remission. For all primary and secondary continuous outcomes except depression (Table 3), hierarchical linear modeling revealed significant interactions between condition and linear time effects: PTSD symptoms as measured

by CAPS (F=7.83, df=2, 154.13, p=0.001) and the Posttraumatic Diagnostic Scale (F=4.42, df=2, 215.14, p=0.01); disability (F=7.45, df=2, 220.14, p=0.001); anxiety (F=5.40, df=2, 176.80, p=0.005); depression (F=0.79, df=2, 213.98, p>0.23); and quality of life (F=3.27, df=2, 231.98, p=0.04). Contrasts revealed that both intensive and standard cognitive therapy led to greater improvement than supportive therapy on the primary outcome measures (CAPS and Posttraumatic Diagnostic Scale scores), disability, and anxiety. For quality of life, standard cognitive therapy was superior to supportive therapy, and we observed a trend for intensive cognitive therapy to be superior (p<0.10). Baseline-adjusted mean group differences at posttreatment and effect sizes are listed in Table 4.

Speed of Recovery

Comparison of the treatment groups at 3 weeks, controlling for initial severity, revealed significant differences on Posttraumatic Diagnostic Scale scores (F=10.35, df=2, 87, p<0.001) and measures of anxiety (F=4.23, df=2, 87, p=0.018) and depression (F=5.27, df=2, 87, p=0.007). The intensive cognitive therapy group scored lower on PTSD symptoms than the standard cognitive therapy and supportive therapy groups (baseline-adjusted means, 16.65 [95% CI=13.19–20.12], 24.05 [95% CI=20.64–27.46], and 27.65 [95% CI=24.18–31.12], respectively). The intensive therapy group also had lower depression scores at 3 weeks than both other treatment groups and lower anxiety scores than patients receiving supportive therapy.

Additional Comparison of Intensive and Standard Weekly Cognitive Therapy Including Waiting List Patients

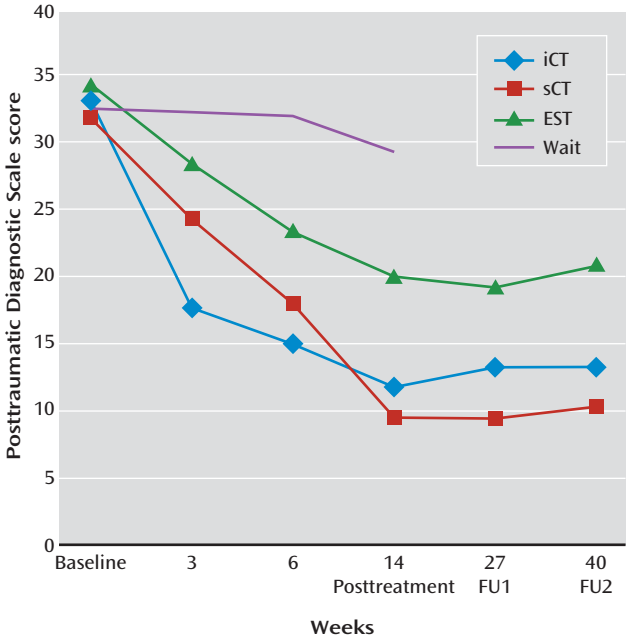
To further test the comparability of outcomes between the intensive and standard cognitive therapy groups, waiting list patients who still had PTSD at the post-waiting period assessment and still wished treatment were randomly assigned to either standard (N=13) or intensive (N=11) cognitive therapy. The comparison of all patients treated with intensive (N=41) and standard cognitive therapy (N=44) had 80% power in detecting a difference of 4.4 points on the Posttraumatic Diagnostic Scale. We found no interactions between treatment condition and time on any measure, indicating comparable outcomes. Baseline-adjusted differences at 14 weeks between all standard weekly and intensive cognitive therapy patients were as follows: CAPS, −2.19 (95% CI=−12.97 to 8.60), d=0.08; Posttraumatic Diagnostic Scale, −1.48 (95% CI=−5.35 to 2.39), d=0.15; disability, 0.51 (95% CI −2.74 to 3.75), d=0.06; anxiety, −2.59 (95% CI=−6.79 to 1.63), d=0.24; depression, 0.27 (95% CI=−3.59 to 4.13), d=0.03; and quality of life, 4.8 (95% CI=−3.18 to 12.72), d=0.23.

Discussion

The main findings were 1) that a novel 7-day intensive version of cognitive therapy for PTSD was well tolerated, achieved faster symptom reduction, and led to comparable overall outcomes as the standard once-weekly cognitive therapy delivered over 3 months, and 2) that both intensive and standard cognitive therapy had specific effects and were more efficacious in treating PTSD than emotion-focused supportive therapy. The intent-to-treat pre-post effect sizes for improvement in PTSD symptoms with both intensive and standard cognitive therapy were very large, and patients' mean scores after treatment were in the nonclinical range. We observed no site effects, suggesting that the treatment worked as well in patients recruited from a routine clinical setting as in those referred to a research clinic. The study replicated the excellent outcomes observed for cognitive therapy for PTSD in previous trials (9, 10) and is the first study to demonstrate that this treatment not only leads to a large reductions in PTSD symptoms, disability, anxiety, and depression, but also to large increases in quality of life.

Some authors (6, 7) have expressed concerns about a risk of symptom exacerbation with trauma-focused psychological treatments, and it is therefore noteworthy that both standard and intensive cognitive therapy were well tolerated, in line with initial case reports of intensive trauma-focused treatments (8, 36). Delivering cognitive therapy in an intensive format did not increase dropout rates or symptom deterioration. Both the standard and intensive cognitive therapy groups were less likely to be rated

FIGURE 2. Changes in PTSD Symptoms in a Randomized Controlled Trial of Cognitive and Supportive Therapies for PTSD[a]



[a] Scores were measured with the Posttraumatic Diagnostic Scale for 7-day intensive cognitive therapy (iCT, all patients), standard weekly cognitive therapy (sCT, all patients), weekly emotion-focused supportive therapy (EST), and waiting list. All patients completed the scale at baseline, 6 weeks, and 14 weeks (posttreatment/wait). Patients receiving therapy also completed the scale at 3 weeks, 27 weeks (follow-up 1, FU1), and 40 weeks (follow-up 2, FU2).

Patient Perspective

"Ms. D," 29 years old, developed posttraumatic stress disorder (PTSD) after a life-threatening medical emergency. The trauma happened 3 years before she participated in the trial.

"I sought treatment because I knew I wasn't dealing well with the after-effects of my trauma. I didn't feel like I was living; only existing. You see, during my trauma, I had physical injuries and my legs had to be amputated below the knees. Afterward, I felt like my life was over.

"I found all of the therapy helpful. Especially going over my memories and making sense of them logically, with the benefit of hindsight and realism. I also found the homework essential to my recovery. I looked forward to the 'me' time completing it.

"At the end of the treatment, I felt so much better! My whole attitude to life had transformed and I looked forward to every new day. Also, my symptoms had dramatically reduced. I still thought of some of the memories (not in a 'flashback' sense), but they no longer caused me to cry.

"Now, 3 years later, my life is very different. I feel totally reconciled to the person I was pre-trauma. I don't find those memories from the past as painful anymore. I can safely say that I am indeed living, not just existing anymore. My experience of cognitive therapy was life changing and I'm very grateful for it."

on the CAPS as having deteriorated than those waiting for treatment. The present study thus underlines the safety of this treatment approach. The feasibility of intensive cognitive therapy is of interest for therapeutic settings where treatment needs to be conducted over a short period of time, such as in residential therapy units or occupational groups exposed to trauma, or where patients have to get better quickly to avoid secondary complications such as job loss or marital problems. The feasibility of intensive treatment is also of interest for patient choice, as some patients may find a shorter condensed treatment preferable.

The novel intensive version of cognitive therapy for PTSD may offer some advantages over weekly treatment. Problems with concentration and memory are common in PTSD, and the intensive format may help keep the therapeutic material fresh in patients' minds until the next session. A possible disadvantage for some patients is that the intensive treatment phase offers less opportunity for the therapist to guide them to reclaim their lives through homework assignments.

Emotion-focused supportive therapy led to greater improvement than waiting for treatment, and a substantial minority of 43% of patients no longer met criteria for PTSD after therapy. Supportive therapy was included as a credible therapeutic alternative so that observed effects of cognitive therapy could be attributed to its specific effects beyond the benefits of good therapy. Emotion-focused supportive therapy is a plausible treatment for PTSD, as the disorder is characterized by high levels of emotional distress, and poor social support has been shown to be a predictor of PTSD (37). Patients' ratings of credibility and therapeutic alliance were the same as for cognitive therapy. Supportive therapy led to similar improvements as cognitive therapy in depression, but led to substantially less improvement in PTSD symptoms, disability, anxiety, and quality of life, indicating specific treatment effects of cognitive therapy. Mean scores on the primary outcome measures were still within the clinical range after supportive therapy, whereas patients treated with standard or intensive cognitive therapy had mean scores in the nonclinical range. Thus, supportive therapy was not as effective as cognitive therapy in treating PTSD, but benefits some patients. The pattern of results is consistent with studies that compared other forms of trauma-focused psychological treatments with active nondirective treatments (20, 21, 38, 39).

This study had some limitations. First, although the observed differences between intensive and standard cognitive therapy were small and nonsignificant, it is conceivable that statistically significant differences could be discovered in larger trials. However, it is debatable whether such small differences would be clinically meaningful. Second, the study focused on traumatic events in adulthood, and it will need to be investigated whether the results generalize for the treatment of childhood trauma.

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