# Preliminary Outcomes of Implementing Cognitive Processing Therapy for Posttraumatic Stress Disorder Across a National Veterans' Treatment Service

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## ABSTRACT

***Background:*** Posttraumatic stress disorder (PTSD) is a significant problem for military veterans. There is an international imperative to improve access to effective treatments, but more research is needed to ascertain the extent to which treatments found to be efficacious in research settings translate to successful national implementation efforts.

***Method:*** This study reports the clinical outcomes for the first 100 clients treated following the implementation of cognitive processing therapy (CPT) across a national community-based veterans' mental health service that commenced in May 2012. The implementation included training and ongoing clinical supervision, leadership support, and updates to the service's data collection and intake system to support the delivery of CPT. The service implemented an intake screen (the Primary Care PTSD) that was used to allocate clients who screened positive for PTSD to CPT-trained therapists. An outcome measure for PTSD (the PTSD Checklist) was incorporated into the services' computerized records system. Clients who received CPT were assessed pretreatment and posttreatment.

***Results:*** Statistically significant and clinically large improvements were found for self-reported PTSD (effect size = 1.01, $P < .001$). In addition, the study obtained high levels of treatment fidelity in the delivery of the CPT treatment.

***Conclusions:*** There is relatively little published research supporting the effectiveness of evidence-based PTSD treatments following national implementation efforts. This is the first study to systematically report CPT treatment outcomes from a national implementation effort, using service-based outcome monitoring data. Results indicate that when administered as part of routine clinical practice, CPT achieves large clinically significant improvements for PTSD comparable with those found in randomized controlled trials.

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Over the past 2 decades, effective treatments for posttraumatic stress disorder (PTSD) have been developed and refined. In response to the growing need for access to effective treatment, the United States, Canada, and Australia are currently deploying large implementation initiatives to disseminate effective treatments for PTSD to veterans' health providers.[1] Trauma-focused approaches are widely recognized as the most effective treatments for PTSD.[2,3] Cognitive processing therapy (CPT)[4] and prolonged exposure therapy[5] are among the most efficacious treatments, supported by a significant body of evidence including military and other populations.[6–9] However, there are limited data on the translation of treatments to real-world settings and on the optimal manner in which treatments can be incorporated into routine administrative and clinical practices within these community clinical settings.

It is critical to demonstrate that treatments disseminated in the international implementation initiatives are being offered and delivered with fidelity, in addition to achieving good clinical outcomes. Implementation research suggests that although evidence-based treatments can be applied successfully in a clinical practice,[10,11] clinical training often produces only very small changes in clinician behavior,[12] and it cannot be taken for granted that a national training and implementation program will lead to widespread adoption and use of a new treatment.[13] Furthermore, a treatment offered by clinicians in a national rollout setting may be more prone to modification than treatment delivered in the context of supervised clinical research.[14] Fidelity to protocol has been found to influence treatment outcomes for some anxiety disorders (eg, Strunk et al[15]). As such, this research sought to examine the extent to which CPT was implemented (ie, offered to suitable patients) as well as the fidelity with which treatment was delivered. The treatment outcomes of the dissemination of prolonged exposure therapy in the US veterans' health system have recently been reported.[16] Results suggest that prolonged exposure therapy produced clinically significant improvements in PTSD and depression comparable to those seen in clinical trials. As yet, the same level of evidence has not been published for CPT.

Preliminary program evaluation data obtained within the context of an examination of CPT supervision processes in the United States are promising, suggesting that outcomes from clients treated by trained clinicians and reported to expert supervisors were similar or superior to those seen in randomized controlled trials.[17] Lessons learned from implementation trials are beginning to emerge (eg, Foa et al[18] and Cook et al[19]), and the training and supervision process underlying the dissemination is being examined and refined.[20] However, as yet, there has been no

**Clinical Points**

- Cognitive processing therapy (CPT) is an effective treatment for posttraumatic stress disorder (PTSD) in veterans when rolled out as part of a national implementation program.
- The Australian Veterans and Veterans Families Counselling Service implementation program was effective in achieving significant practice change in screening for PTSD and allocation of PTSD cases to CPT.
- CPT can be competently delivered by regular staff of community services when provided with adequate clinical and organizational support.

published study reporting on the systematic investigation of clinical outcomes from CPT dissemination for clients across a treatment system comparable to those studies published for prolonged exposure therapy. Such data are critical to ensuring that the interventions provided in these large-scale national dissemination programs are effective and that the quality of treatment provided in national rollouts is comparable to that provided within the randomized controlled trials that generated the initial efficacy data.

The Australian CPT implementation aimed to enable the provision of high quality CPT to veterans and serving members with PTSD across the national community-based veterans' mental health service. The primary aim of this study is to report data on the clinical outcomes from the first 100 veterans participating in this PTSD treatment. In addition, this study examines the service-level changes in screening and allocation patterns resulting from this implementation, which was conducted in the same service system as a randomized controlled trial of CPT 3 years earlier.[10]

## METHOD

### Participants

***Clinical setting and clients.*** This study reports data from the first 100 recipients of CPT following the implementation of CPT in the Veterans and Veterans Families Counselling Service in Australia, a nationwide community-based and government-funded mental health service for former serving members of the defense forces and their families.

***Clinicians.*** Approximately half of the full-time staff of the service were trained in the delivery of CPT. The group comprised counselors and clinical managers representing all states and territories of Australia (n = 37). Among the counselors (n = 31), 61% (n = 19) were psychologists, and the remainder were social workers. Fifty-five percent (n = 17) had qualified as mental health providers more than 10 years ago and most had 1 to 10 years of experience, with a small minority (6.5%, n = 2) qualifying as a provider of mental health services less than 1 year ago. Over two-thirds (67.7%, n = 21) reported that they had not provided treatment using a manual before.

### Procedure

The organizational climate and factors likely to influence uptake of CPT in the service were assessed. As a result, screening for PTSD was added to the organization's intake protocol and incorporated into the computerized intake record system to ensure that new clients who might benefit from CPT treatment were identified upon entry to the service. In addition to targeting clients entering the service, clinicians were encouraged to identify cases existing in their current caseload for whom CPT might be suitable through internal intake and supervision procedures. Clinical managers were included in CPT training and support teleconferences and were designated the role of internal CPT "champions."

CPT training involved a 2-day face-to-face format using the Veteran & Military 2010 version of the CPT manual for therapists.[21] Thirteen consultation teleconferences were provided, occurring fortnightly for 6 months. Consultation calls were facilitated by the CPT trainer (R.N.). Treatment outcome data as well as details of the treatment provided were entered into the computerized records system. These data were extracted by the service, de-identified, and provided to researchers.

### Measures

***Screening.*** The Primary Care PTSD screen[22] is a brief 4-question screen. A cutoff of 2 positive responses was used to indicate possible PTSD and suitability for further consideration for PTSD assessment and treatment. The screen has strong psychometric characteristics and diagnostic efficiency[22,23] and was incorporated into the service's intake interview protocol.

***Outcome measure.*** The PTSD Checklist[24] is a 17-item self-report questionnaire for PTSD symptoms. The PTSD Checklist has demonstrated high levels of diagnostic accuracy against diagnostic interviews both at a single timepoint and over the course of treatment and follow-up.[25] Use of the PTSD Checklist is integral to the CPT protocol. It was also integrated into the service's computer records system for the purpose of outcome monitoring.

***Fidelity measures.*** All trained clinicians were requested to audio record at least 1 CPT case to be assessed for treatment fidelity. Initiation of audio recording was randomized, with clinicians at each site instructed to commence recording with the next available client in a randomly selected month. Fifteen percent of completed sessions were rated by clinicians experienced in delivery and fidelity rating of CPT using the same rating form as used in prior research.[6,10] Cases were randomly selected, then, for each case, up to 3 randomly selected sessions were rated. Protocol adherence competence and overall therapist skill were calculated.

***Statistical analysis.*** The first and last PTSD Checklists available for each client were entered into the analysis. Because there were no significant differences on the outcome measure between the baseline scores of participants who did and did not have final outcome scores, the paired analyses

are presented. Pretreatment and posttreatment differences were assessed using paired *t* tests. Effect size differences were assessed using Hedges *g*.[26]

## RESULTS

Demographic characteristics of the first 100 recipients of CPT following the national rollout are presented in Table 1. The sample is predominantly male and represents a slight majority of veterans from recent conflicts. PTSD from combat or other warzone trauma was the most commonly reported presenting problem.

### Clinical Outcomes

As there were no significant differences on any outcome measures between the baseline scores of participants who did and did not have final outcome scores ($t_{98} = -0.966$; $P = .337$), the paired analyses are presented for those with complete data (n = 71). The pretreatment PTSD Checklist score was 55.97 (SD = 12.08), and the posttreatment PTSD Checklist score was 41.59 (SD = 16.01). This 14.38-point (SD = 13.91) mean difference between PTSD Checklist scores indicates that CPT clients made large clinically and statistically significant treatment gains in self-reported PTSD ($t_{70} = 8.712$; $P < .001$; $g = 1.01$; 95% CI, 0.66–1.36).

A reduction of 10 points or more on the PTSD Checklist is generally considered a clinically meaningful improvement.[8] Of clients who completed baseline and outcome assessments (n = 71), 63.4% (n = 45) achieved clinically meaningful improvements on the PTSD Checklist. This compares to 72.4% reported for the national implementation of prolonged exposure therapy.[16]

### Fidelity of Treatment

Adherence to protocol was 79% (122/155) across rated sessions, that being about 10% lower than most published randomized controlled trials, eg, 92%,[10] 93%,[6] and 90%.[27] Competence ratings were satisfactory or better on 88% of the elements rated. This compares with 91% under randomized controlled trial conditions in the same service 3 years earlier as reported by Forbes et al.[10] Overall, therapists' skills were rated at 5.0 (good) on a scale of 1 (poor) to 7 (excellent); this compares to 5.4 (good to very good) in the aforementioned randomized controlled trial. The elements of CPT sessions most commonly missed were agenda setting, discussing barriers to homework completion, and reviewing homework with the client.

### Service Implementation Outcomes

A screening compliance rate of 40% was achieved at intake; that is, of all callers to the service, the proportion screened for PTSD increased from 0% prior to the implementation to 40% 12 months later. This is a respectable increase given the challenges of systematic behavior change documented in the literature.[28,29] During the study period, 556 clients (48.5%) screened positive for PTSD, and 590 (51.5%) screened negative. Those clients who screened positive for PTSD at intake were significantly more likely to be allocated to a CPT trained counselor ($\chi^2_{1,146} = 14.21$; $P < .001$) than those who screened negative. Of the 100 cases considered for this article, 61 cases (61%) were assigned to a CPT therapist via the intake screen process, with the remaining cases identified as being suitable for CPT from within the service's existing client base.

**Table 1. Participant Demographics (N = 100)**

| Demographic | Value |
|---|---|
| Age, mean (SD), y[a] | 43.82 (14.59) |
| Aged < 45 years (predominantly OIF/OEF returnees), n (%) | 61 (61) |
| Male gender, n (%)[a] | 82 (82) |
| Marital status, n (%) | |
| Married or de facto | 63 (63) |
| Separated or divorced | 11 (11) |
| Single | 19 (19) |
| Not reported | 7 (7) |
| Trauma type, n (%) | |
| Combat | 28 (28) |
| Noncombat war zone | 30 (30) |
| Noncombat military adult trauma | 24 (24) |
| Sexual trauma | 14 (14) |
| Other | 4 (4) |
| CPT sessions received, mean (SD) | 8.49 (4.91) |
| 1–4 sessions | 30 (30) |
| 5–8 sessions | 18 (18) |
| 9–12 sessions | 33 (33) |
| 12+ sessions | 19 (19) |
| PCL severity scores at baseline, mean (SD) | 56.73 (12.28) |

[a]N = 98.
Abbreviations: CPT = cognitive processing therapy, OEF = Operation Enduring Freedom, OIF = Operation Iraqi Freedom, PCL = Posttraumatic Stress Disorder Checklist.

In order to understand the reasons why CPT was not delivered to all clients who screened positive for PTSD, screening data were extracted for 2 months, and 60 randomly selected cases were chosen. At the time of initial assessment, clinicians had been asked to report on the decision not to deliver CPT to these cases. The most common reasons for not delivering CPT were other overriding problems or issues that required stabilization, for example, problematic alcohol use, presenting for relationship issues, grief, traumatic brain injury, and memory problems (n = 29, 48%). A minority of clients were assessed as not having PTSD (n = 11, 18%), did not want to address their PTSD (n = 9, 15%), or stopped attending counseling before CPT could be offered (n = 7, 12%). A small minority (n = 4, 7%) were not offered CPT as all trained CPT therapists were already at capacity.

Clients received, on average, 8.49 (SD = 4.91) CPT sessions, which was about 2 CPT sessions less than randomized controlled trial participants[10] (mean = 10.27, SD = 4.93). This compares to 5.63 (SD = 5.10) sessions for service users receiving individual counseling other than CPT during the implementation period.

## CONCLUSIONS

This research examined the early data from the implementation of CPT across a national veterans' mental health service. There is relatively little published research

supporting the effectiveness of evidence-based PTSD treatments following national implementation efforts. This is the first study to systematically report CPT treatment outcomes from a service-wide implementation effort, using service-based outcome monitoring data. Results indicate that when administered as part of routine clinical practice, CPT achieves significant improvements for PTSD and common comorbidities. After implementation, the service was able to demonstrate significant practice change including the identification of PTSD through screening and the development of a consistent allocation process to an evidence-based therapy, which resulted in increased use of CPT and utilization of computer records systems to monitor outcomes from CPT treatment.

Clients achieved large pre–post clinical effects for PTSD (effect size = 1.01), comparable to an effect size of 1.13 achieved under randomized controlled trial conditions in the same service 3 years prior. These results compare favorably to effect sizes of 1.10 reported in a meta-analysis of exposure-type treatments for combat veterans[30] and 0.87 reported for recipients of prolonged exposure therapy post implementation in US veterans' services.[16] The proportion of veterans achieving clinically significant improvements (63.4%) is similar to proportions reported for the earlier randomized controlled trial[10] (67.0%) and for the national implementation of prolonged exposure therapy[16] (62.4%). Importantly, these findings were obtained in the context of routine clinical practice within 1 year of initial training among clinicians who received up to 13 hours of clinical consultation. The amount of consultation provided was selected as it was thought to provide the minimum clinical support required to deliver CPT with quality and fidelity while meeting the operational requirements of a community service, namely, funding, time release for clinicians for training purposes, and human resources for clinical CPT supervision. These findings demonstrated significant outcomes from a CPT implementation program with as little as 25% of the CPT consultation time conventionally provided in veteran research trials (eg, Monson et al[6 and Forbes et al10]) and half the amount of telephone consultation provided in the United States Department of Veterans Affairs CPT rollout.[1] This research also demonstrates that with only a 10% reduction in adherence to protocol, strong clinical outcomes are achievable using sustainable levels of resources used to support clinicians. Furthermore, the research demonstrates that CPT can be competently delivered by regular staff of community services when they are provided with adequate clinical and organizational support.

During the 12 months of this research, CPT clients received on average more treatment than other clients of the service. Thus, contrary to clinician expectations, this trauma-focused, manualized treatment enabled clinicians to retain clients in treatment longer than other forms of treatment. The clients that received treatment during the implementation process received about the same number of treatment sessions as those reported in the US prolonged exposure therapy implementation (8.49 vs 9.0, respectively).[31] At the same time, the amount of treatment time for CPT in this study was lower than that found in the randomized controlled trial in this service. The rate of dropout before completing 5 sessions was 30%, the same as that of the randomized controlled trial. The prolonged exposure therapy implementation[16] reports a lower dropout rate (28% dropout before 8 sessions). Nevertheless, clients treated post implementation received sufficient treatment to evidence strong clinical outcomes.

As part of the implementation of CPT, a screening process was incorporated into the clinical service's standard operating processes. The screen allowed identification of PTSD at intake and selective referral of potential PTSD cases to CPT-trained clinicians. This was especially important since not all staff were trained in CPT. Trained clinicians were also able to identify cases from within the services' existing clients such that CPT was offered and delivered flexibly through other compatible pathways for clients presenting to different parts of the system. While a 40% screening rate may seem low, computer reminders and monitoring of simple practice changes (such as intake screening) generally achieve very small increases in compliance (around 4%).[32,33] Using leaders and champions is somewhat more effective, yet even then, reviews find only a 12% absolute increase in compliance.[34] In light of this, the maintenance of a 40% screening rate can be interpreted as a considerable achievement.

Insofar as the methodology was strengthened by using the service's existing outcome monitoring and service delivery computer system, it was also a limitation of this study, as it led to missing data. The data collection and entry were undertaken by clinicians, not researchers. The PTSD Checklist was obtained for just under three-quarters of the sample. Investigations confirmed that missing outcome data were not associated with baseline severity scores, but nonetheless, missing data remain a weakness of this study. It is also pertinent to note that outcomes are based only on self-reported PTSD, not all clients were recorded for the fidelity assessment, and the study was not a controlled trial and had a relatively small sample size. Given the imperative to examine and disseminate implementation data, this sample presents important early indicators about the strength of outcomes that can be obtained in a national rollout. It serves to bolster confidence at a clinical level about the impact that can be obtained by trained clinicians with a new treatment and, at system level, sets a benchmark for systematic outcome monitoring in the future.

Internationally, there is a strong investment in improving mental health care for returning servicemen and servicewomen. Increasing our understanding of the process and outcomes involved in the implementation of evidence-based mental health treatments into clinical services is critical to improve these services and to promote opportunities for recovery.[35] This research provides evidence from systematically collected service data, increasing our confidence that CPT will achieve strong clinical outcomes for veterans when implemented as a national treatment initiative.

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