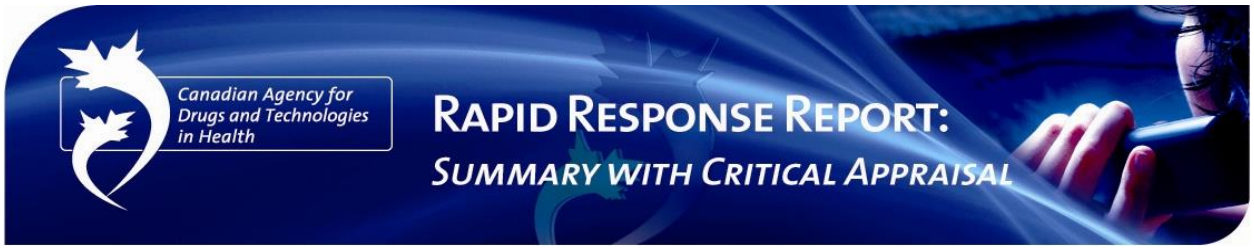

TITLE: Long and Short Duration Inpatient Treatment Programs for the Treatment of Post-Traumatic Stress Disorder: A Review of the Comparative Effectiveness and Guidelines

DATE: 07 September 2016

CONTEXT AND POLICY ISSUES

Post-traumatic stress disorder (PTSD) is a complex somatic, affective, and behavioral effect of psychosocial trauma, characterized by intrusive thoughts, nightmares and flashbacks of past traumatic events, hypervigilance, sleep disturbances leading to considerable social, and interpersonal dysfunction.[1,2] Over 76% of Canadians have reported exposure to a significant stress event; the lifetime prevalence of PTSD in Canada has been estimated to be 9.2%.[3] The 2013 Canadian Forces Mental Health Survey provides an estimate for the presence of PTSD in serving personnel; of 8200 Canadian Armed Forces personnel surveyed, 11.1% of Regular Forces personnel met criteria for PTSD at some point in their life, with 5.3% having met the diagnostic criteria in the time of the survey or over the previous year.[4]

Patients can be treated for PTSD in numerous services, programs, and settings, for varying durations. There are usually four levels of care for patients with mental illness: inpatient hospitalization (24-hour care in a structured setting, usually for patients who are severely depressed, traumatized, or suicidal), residential treatment (similar to inpatient hospitalization but in a more home-like environment, medical staff not available on a 24-hour basis, for residents who are declared medically stable), partial hospitalization (day treatment, for patients who need structured treatment program but do not need 24-hour supervision), or outpatient treatment.[5]

There remains uncertainty about the effective durations for treatment, and benefits of more resource-intensive inpatient treatment versus outpatient programs. This Rapid Response report aims to review the comparative clinical effectiveness of long- (over 90 days) versus short-term (28 to 45 days) inpatient treatment programs, and the comparative clinical effectiveness of inpatient versus outpatient treatment programs for patients with PTSD. Evidence-based guidelines regarding inpatient treatment programs for patients with PTSD will also be examined.

RESEARCH QUESTIONS

1. What is the comparative clinical effectiveness of long- versus short-term inpatient treatment programs for patients with post-traumatic stress disorder, with or without comorbid substance-related and addictive disorder?

2. What is the comparative clinical effectiveness of inpatient versus outpatient treatment programs for patients with post-traumatic stress disorder, with or without comorbid substance-related and addictive disorder?

3. What are the evidence-based guidelines regarding inpatient treatment programs for patients with post-traumatic stress disorder, with or without comorbid substance-related and addictive disorder?

KEY FINDINGS

Data from one RCT on a small number of patients suffering traumatic injuries showed that symptoms of depression, anxiety and PTSD were reduced in more patients starting one year after trauma in the long-term group (inpatient treatment further extended into outpatient care) compared to the short-term group (inpatient treatment only). This difference between short- and long-term groups was not statistically significant. There was no evidence found on the comparative clinical effectiveness of long- versus short-term inpatient treatment programs for patients with post-traumatic stress disorder, with or without comorbid substance-related and addictive disorder. No evidence-based guidelines regarding inpatient treatment programs for PTSD were identified.

METHODS

Literature Search Strategy

A limited literature search was conducted on key resources including MEDLINE via OVID, PsycINFO via OVID, PubMed, The Cochrane Library, University of York Centre for Reviews and Dissemination (CRD) databases, Canadian and major international health technology agencies, as well as a focused Internet search. No filters were applied to limit the retrieval by study type for research questions 1 and 2. Methodological filters were applied for research question 3 to limit retrieval to guidelines. The search was also limited to English language documents published between January 1, 2011 and August 9, 2016.

Selection Criteria and Methods

One reviewer screened the titles and abstracts of the retrieved publications and examined the full-text publications for the final article selection. Selection criteria are outlined in Table 1.

Table 1: Selection Criteria

Population	All adult patients with PTSD with or without substance-related and addictive disorder (military personnel, veterans are of key interest)
Intervention	Q1: Long-term (90+ days) inpatient treatment programs Q2 and Q3: Long or short term inpatient treatment programs

Comparator	Q1: Short-term (28 to 45 days) inpatient treatment programs Q2 and Q3: Long or short term outpatient treatment programs
Outcomes	Effectiveness in improving therapeutic outcomes (such as decreased symptoms, quality of life, increased functioning, return to work), harms, other benefits Evidence-based guidelines regarding inpatient treatment programs for PTSD.
Study Designs	Health technology assessments (HTA), systematic reviews (SR), meta-analyses (MA), randomized controlled trials (RCTs), non-RCTs, guidelines.

Exclusion Criteria

Articles were excluded if they did not meet the selection criteria in Table 1, if they were published prior to January 2011, if they were duplicate publications of the same study, or if they were referenced in a selected systematic review.

Critical Appraisal of Individual Studies

The quality of the included clinical studies was assessed using the Downs and Black checklist.[6] Numeric scores were not calculated. Instead, the strengths and limitations of the study are summarized and presented narratively.

SUMMARY OF EVIDENCE

Quantity of Research Available

The literature search yielded 381 citations. After screening of abstracts from the literature search and from other sources, four potentially relevant studies were selected for full-text review. One study was included in the review. The PRISMA flowchart in Appendix 1 details the process of the study selection.

Summary of Study Characteristics

The identified RCT compared the short-term inpatient psychotherapy to continued outpatient psychotherapy on psychosocial outcomes in patients following trauma, mostly from car or motorcycle injuries.[7] Patients aged 18 years to 65 years who had at least two injuries with a combined Abbreviated Injury Scale (AIS) Severity Score Index ≥5 were included. Patients were randomized to short-term group (n = 59) or long-term group (n = 54). Short-term therapy consisted of up to eight sessions of inpatient psychotherapy. Long-term therapy consisted of short-term inpatient psychotherapy plus up to six sessions of outpatient psychotherapy over a period of 6 months after discharge. Symptoms of depression, anxiety and PTSD were evaluated using the Beck Depression Inventory (BDI), State-Trait Anxiety Inventory (STAI) and Impact of Event Scale Revised (IES-R) tools, respectively, at different time points: inclusion, discharge, 6 months, 12 months and 18 months follow-up.

A detailed summary of the study design, population, interventions/comparators, and outcomes of the included study is provided in Appendix 2.

Summary of Critical Appraisal

The included study is an RCT[7] with hypothesis, method of selection from source population and representation, interventions, patient characteristics, and losses to follow-up clearly described. The method of randomization is appropriate and clearly described, and the patient characteristics are balanced in the two treatment groups. Due to the nature of the interventions, blinding of care providers and patients was not possible. It was unclear whether outcome assessors were blinding to the intervention assignments. Estimates of random variability and actual probability values were provided. Main findings were not clearly described and it was unclear whether study had sufficient power to detect a clinically important effect. Treatment was conducted according to a manual developed by experienced psychotherapists and tailored to the needs of accident victims. Manual adherence was evaluated by independent collaborators. This ensures consistent care between patients, though it is unclear whether the manualized treatment is reflective of the care that might be received in other settings.

Details of the strengths and limitations of the included studies are summarized in Appendix 3.

Summary of Findings

Main findings of included studies are summarized in detail in Appendix 4.

1. What is the comparative clinical effectiveness of long- versus short-term inpatient treatment programs for patients with post-traumatic stress disorder, with or without comorbid substance-related and addictive disorder?

There was no evidence on the comparative clinical effectiveness of long- versus short-term inpatient treatment programs for patients with post-traumatic stress disorder, with or without comorbid substance-related and addictive disorder

2. What is the comparative clinical effectiveness of inpatient versus outpatient treatment programs for patients with post-traumatic stress disorder, with or without comorbid substance-related and addictive disorder?

An RCT compared the short-term in-patient to continued out-patient psychotherapy (inpatient treatment further extended into outpatient care) on psychosocial outcomes in patients with trauma, mostly from car or motorcycle accidents.[7] Patients were randomized to short- (n = 59) or long-term groups (n = 54). Short-term therapy consisted of up to eight sessions of inpatient psychotherapy. Long-term therapy consisted of short-term inpatient psychotherapy plus up to six sessions of outpatient psychotherapy over a period of 6 months after discharge. Symptoms of depression, anxiety and PTSD were evaluated using BDI, STAI, and IES-R tools, respectively, at inclusion, discharge, 6 months, 12 months and 18 months follow-up.

Symptoms of depression, anxiety and PTSD were reduced in more patients in the long-term group starting one year after trauma compared to the short-term group. The effect seemed to be maintained at 18-month follow-up. The differences between short- and long-term groups were

not statistically significant. 21% of the short-term group patients showed at least one mental health disorder compared to no patients in the long-term group 1 year after trauma (*P* = 0.035).

The authors reported that differences in the number of patients with symptoms between short- and long-term groups nearly reached significance for anxiety (*P* = 0.051) and PTSD (*P* = 0.059), but the basis for these probability values was unclear., and concluded that treatment extended to outpatient care seemed to be effective in treating depression, anxiety and PTSD.

3. What are the evidence-based guidelines regarding inpatient treatment programs for patients with post-traumatic stress disorder, with or without comorbid substance-related and addictive disorder?

There were no evidence-based guidelines identified regarding inpatient treatment programs for patients with post-traumatic stress disorder, with or without comorbid substance-related and addictive disorder.

Limitations

Evidence comparing clinical effectiveness of inpatient versus outpatient treatment programs for patients with post-traumatic stress disorder was limited to a single RCT with a small number of patients, and with clinical data not clearly reported. The patient population with trauma from traffic accidents further limits the generalizability of the findings.

CONCLUSIONS AND IMPLICATIONS FOR DECISION OR POLICY MAKING

Data from one RCT on a small number of patients suffering injuries mostly from car or motorcycle accidents showed that symptoms of depression, anxiety and PTSD were reduced in more patients starting one year after trauma in the long-term group (inpatient treatment further extended into outpatient care) compared to the short-term group (inpatient treatment). The differences between short- and long-term groups were not statistically significant. There was no evidence found on the comparative clinical effectiveness of long- versus short-term inpatient treatment programs for patients with post-traumatic stress disorder, with or without comorbid substance-related and addictive disorder. No evidence-based guidelines regarding inpatient treatment programs for PTSD were identified.

Evidence comparing clinical outcomes of inpatients and outpatients with PTSD is scarce. A pre and post observational study compared changes in symptoms in outpatient and residential patients who are veterans with PTSD. All participants attended at least one but no more than 15 sessions of individual treatment of psychotherapeutic therapy.[8] Data showed that outpatients (mean total 8.29 sessions) reported fewer PTSD-related symptoms than residential patients (mean total 11.77 sessions) at both pre- and post-treatment time points. Outpatients experienced a decrease of 22.26 points using PTSD Checklist – Stressor Specific Version (PCL – S) between pre- and post-treatment, and residential patients experienced a decrease of 14.29 points (statistical significance not reported).

The US Institute of Medicine issued in 2012 the report “Treatment for posttraumatic stress disorder in military and veteran populations: Initial assessment”.[9] The report mentioned that “*Service members can be treated for PTSD in numerous services, programs, and settings, including counseling centers, general inpatient and outpatient mental health services, and*

specialized treatment programs." (p 122) "*PTSD day hospitals provide intensive outpatient care for 3–6 weeks in individual or group settings. Evaluation and brief treatment PTSD units provide 14–28 days of care for acute cases of PTSD in inpatient psychiatric units with mandatory follow-up care after a stay. Specialized inpatient PTSD units provide trauma-focused care for 28–90 days for veterans who require more intense and monitored care. PTSD residential rehabilitation programs and PTSD domiciliary programs also provide longer-term care, generally 28–90 days, in a residential therapeutic environment to prepare veterans to re-enter the civilian community with better "self care and self control capabilities"* (p 148, 149)

Further research is needed to examine the comparative clinical effectiveness of inpatient versus outpatient treatment programs, as well as the effect of long-versus short-term inpatients treatment programs, in order to formulate evidence-based guidelines regarding inpatient treatment programs for patients with PTSD.

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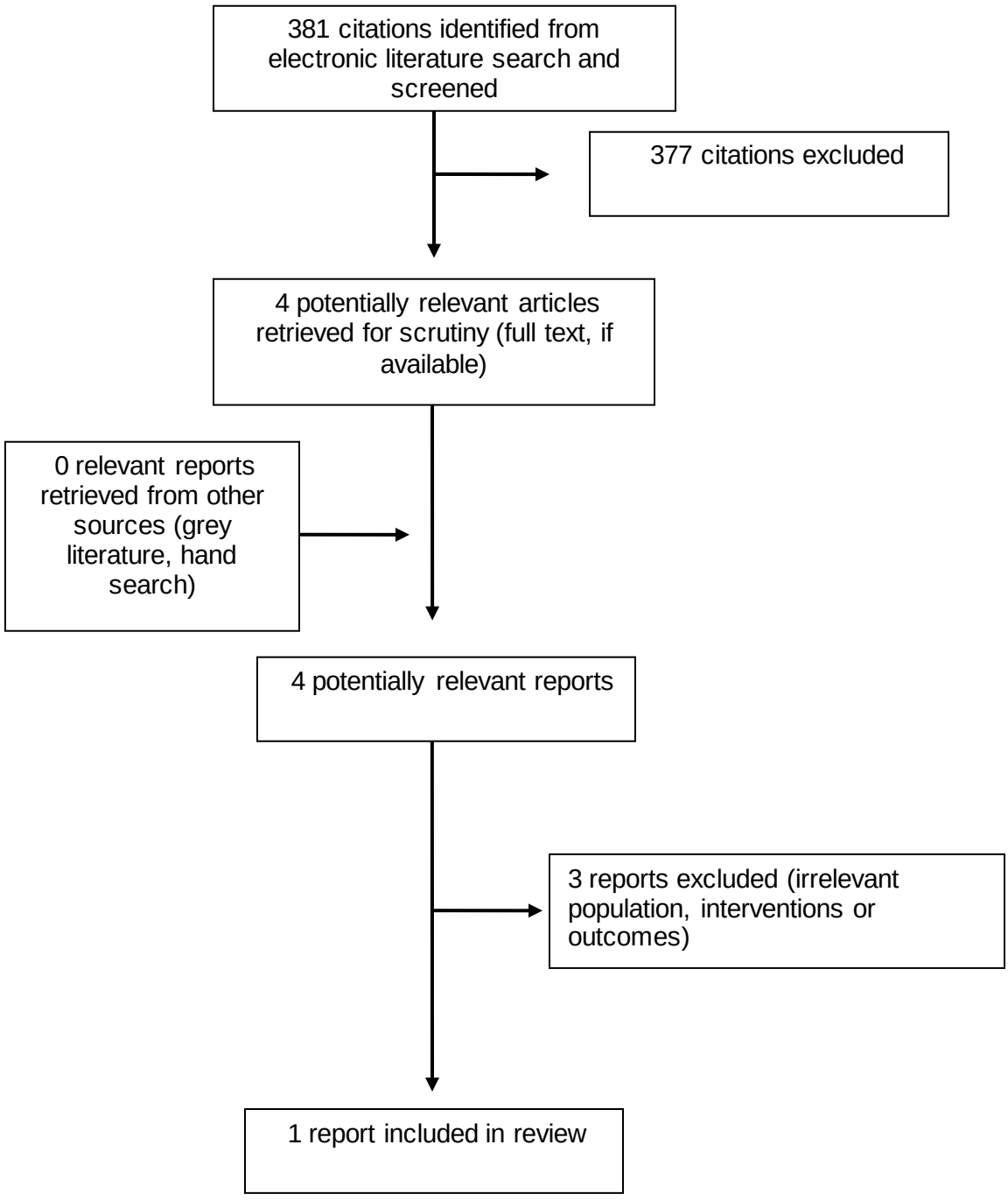
Appendix 1: Selection of Included Studies



Appendix 2: Characteristics of Included Studies

Table A1: Characteristics of Included studies

Clinical Studies

First author, Year, Country	Study Objectives	Interventions/Comparators	Patients	Main Study Outcomes
Tecic,[7] 2011, Germany	*"The aim of this study was to compare short-term inpatient versus continued long-term outpatient psychotherapeutic support"* (p 433)	Short-term group: up to eight sessions of inpatient psychotherapy. Long-term group: short-term inpatient psychotherapy and, in addition, up to six sessions of outpatient psychotherapy over a period of 6 months after discharge.	Patients aged 18 years to 65 years who had at least two Injuries, mostly from car or motorcycle accidents, with a combined Abbreviated Injury Scale (AIS) Severity Score Index ≥5 Short-term group: 59 patients Long-term group: 54 patients 41% of all patients (n = 46) completed follow-up visits	Symptoms of depression, anxiety and PTSD

PTSD : post-traumatic stress disorder

Appendix 3: Summary of Critical Appraisal of Included Study

Table A2: Summary of Critical Appraisal of Included Study		
First Author, Publication Year	**Strengths**	**Limitations**
Critical appraisal of included clinical studies (Downs and Black[6])		
Tecic,[7] 2011	• hypothesis clearly described • patients randomized • method of selection from source population and representation described • interventions, patient characteristics clearly described • estimates of random variability and actual probability values provided • losses to follow-up described	• main findings not clearly described • unclear if study had sufficient power to detect a clinically important effect

Appendix 4: Main Study Findings and Authors' Conclusions

Table A3: Main Study Findings and Authors' Conclusions

First Author, Publication Year	Main Study Findings	Authors' Conclusions
Research question 1 (comparative clinical effectiveness of long- versus short-term inpatient treatment programs for patients with post-traumatic stress disorder, with or without comorbid substance-related and addictive disorder)		
There was no evidence on the comparative clinical effectiveness of long- versus short-term inpatient treatment programs for patients with post-traumatic stress disorder, with or without comorbid substance-related and addictive disorder		
Research question 2 (comparative clinical effectiveness of inpatient versus outpatient treatment programs for patients with post-traumatic stress disorder, with or without comorbid substance-related and addictive disorder)		
Tecic,[7] 2011	Symptoms of depression, anxiety and PTSD disappeared in more patients in the long-term group 1 year after trauma compared to the short-term group. Differences were not statistically significant in all groups. Differences between short- and long-term groups nearly reached significance for anxiety (P = 0.051) and PTSD (P = 0.059) (not clear where these probabilities values came from) 21% of the short-term group patients showed at least 1 mental health disorder compared to no patients in the long-term group 1 year after trauma (P = 0.035). Depression BDI; mean (SD), number of patients (n) Short-term / Long-term / P Inclusion: 9.3 (8.3), 56 / 11.7 (8.0), 51 / 0.132 Discharge: 7.5 (7.4), 45 / 8.0 (6.0), 42 / 0.761 6MFU: 6.9 (7.5), 31 / 9.6 (9.2), 30 / 0.220 12MFU: 8.1 (12.1), 38 / 9.0 (9.0), 28 / 0.749 18MFU: 5.4 (6.7), 37 / 6.0 (7.1), 23 / 0.753 Anxiety STAI; mean (SD), number of patients (n) Inclusion: 43.9 (12.7), 53 / 48.6 (15.5), 51 / 0.091 Discharge: 37.4 (12.8), 44 / 40.5 (13.3), 41 / 0.280 6MFU: 38.5 (14.2), 31 / 34.8 (12.9), 30 / 0.299 12MFU: 38.5 (14.6), 36 / 38.0 (15.8), 27 / 0.905 18MFU: 35.7 (13.8), 38 / 37.0 (14.3), 23 / 0.743 PTSD IES-R; mean (SD), number of patients (n) Inclusion: -2.1 (1.7), 51 / -1.9 (1.9), 50 / 0.620 Discharge: Not collected / Not collected / - 6MFU: -2.6 (2.0), 32 / -2.6 (1.7), 30 / 0.999 12MFU: -2.6 (2.2), 38 / -2.7 (1.6), 27 / 0.873 18MFU: -3.0 (1.8), 38 / -2.8 (1.8), 24 / 0.636	*"Psychotherapeutic support of severely injured patients seems to be more effective in reducing depression, anxiety, and PTSD if extended further into outpatient care. This conclusion should be considered preliminary because of the small number of study patients"* (p 433)
Research question 3 (evidence-based guidelines regarding inpatient treatment programs for patients with post-traumatic stress disorder, with or without comorbid substance-related and addictive disorder)		
There was no evidence on the evidence-based guidelines regarding inpatient treatment programs for patients with post-traumatic stress disorder, with or without comorbid substance-related and addictive disorder		

BDI: Beck Depression Inventory; IES-R: Impact of Event Scale-Revised; MFU: month follow-up; PTSD: post-traumatic stress disorder; SD: standard deviation; STAI: State-Strait Anxiety Inventory.