

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

DATE: 04 November 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 8,200 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 (i.e., 24-hour care in a structured setting, usually for patients who are severely depressed, traumatized, or suicidal), residential treatment (i.e., 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 (i.e., 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- (i.e., over 90 days) versus short-term (i.e., 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.

Disclaimer: The Rapid Response Service is an information service for those involved in planning and providing health care in Canada. Rapid responses are based on a limited literature search and are not comprehensive, systematic reviews. The intent is to provide a list of sources of the best evidence on the topic that the Canadian Agency for Drugs and Technologies in Health (CADTH) could identify using all reasonable efforts within the time allowed. Rapid responses should be considered along with other types of information and health care considerations. The information included in this response is not intended to replace professional medical advice, nor should it be construed as a recommendation for or against the use of a particular health technology. Readers are also cautioned that a lack of good quality evidence does not necessarily mean a lack of effectiveness particularly in the case of new and emerging health technologies, for which little information can be found, but which may in future prove to be effective. While CADTH has taken care in the preparation of the report to ensure that its contents are accurate, complete and up to date, CADTH does not make any guarantee to that effect. CADTH is not liable for any loss or damages resulting from use of the information in the report.

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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

Two studies did not find any statistically significant differences in the comparative clinical effectiveness of inpatient versus outpatient treatment programs for patients with post-traumatic stress disorder (PTSD). One study⁶ did not find a difference in the clinical effectiveness of long-versus short-term inpatient treatment programs. Another study found shorter treatment programs more effective shortly after discharge, but results tended to converge over time. No evidence was found on evidence-based guidelines regarding inpatient treatment programs for PTSD.

METHODS

Literature Search Methods

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. Where possible, retrieval was limited to the human population. The search was limited to English-language documents published between January 1, 2001 and October 7, 2016.

Rapid Response reports are organized so that the evidence for each research question is presented separately.

Selection Criteria and Methods

One reviewer screened citations and selected studies. In the first level of screening, titles and abstracts were reviewed and potentially relevant articles were retrieved and assessed for inclusion. The final selection of full-text articles was based on the inclusion criteria presented 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 (usually multidisciplinary and include: medical or pharmacological treatment, evidence-based programs) Q2 and Q3: long or short term inpatient treatment programs
Comparator	Q1: short-term (28 to 45 days) inpatient treatment programs (usually multidisciplinary and include: medical or pharmacological treatment, evidence-based programs) Q2: outpatient treatment programs (can also be multidisciplinary, include medical or pharmacological treatment, evidence-based programs)
Outcomes	Q1 and Q2: effectiveness in improving therapeutic outcomes (such as decreased symptoms, Quality of Life, increased functioning, return to work), harms, other benefits Q3: Evidence-based guidelines regarding inpatient treatment programs for this population.
Study Designs	Health technology assessments, systematic reviews, meta-analyses, randomized controlled trials, non-randomized studies, evidence-based guidelines

Exclusion Criteria

Articles were excluded if they did not meet the selection criteria outlined in Table 1, they were duplicate publications, or were published prior to 2001.

Critical Appraisal of Individual Studies

The included randomized and non-randomized studies were critically appraised using Downs and Black. Summary scores were not calculated for the included studies; rather, a review of the strengths and limitations of each included study were described.

SUMMARY OF EVIDENCE

Quantity of Research Available

A total of 915 citations were identified in the literature search. Following screening of titles and abstracts, 881 citations were excluded and 34 potentially relevant reports from the electronic search were retrieved for full-text review. The final selection included one randomized controlled trial (RCT)⁷ and three non-randomized studies (NRS).^{6,8,9} Appendix 1 describes the PRISMA flowchart of the study selection.

Additional references of potential interest are provided in Appendix 5.

Summary of Study Characteristics

Detailed study characteristics are provided in Appendix 2.

Study Design

One RCT⁷ had a sample size of 113 patients.

Three NRS^{6,8,9} had sample sizes ranging from 90 to 6,397 patients.

Country of Origin

Two studies^{6,9} were conducted in the United States of America, one study⁸ in Croatia, and one study⁷ in Germany.

Patient Population

One study⁷ included patients aged 18 years to 65 years, who had at least two injuries, mostly from car or motorcycle accident, with a combined Abbreviated Injury Scale (AIS) Severity Score Index ≥ 5 . A higher AIS score indicates a more severe injury. Three studies^{6,8,9} included patients, who were suffering from PTSD, and two of these studies^{6,9} examined veterans, who were suffering from PTSD.

Interventions and Comparators

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?

One NRS⁹ compared a brief inpatient treatment program (program length not-specified) with a long-term (i.e., four months) inpatient treatment program. Another NRS⁶ examined patients in an inpatient psychiatric care in a pre- and post-study.

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?

In the RCT,⁷ 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. As well, long-term therapy consisted of short-term inpatient psychotherapy plus up to six sessions of outpatient psychotherapy over a period of six months after discharge. One NRS⁸ examined inpatient treatment programs with outpatient treatment programs. The patients were divided into two groups: one group was treated for PTSD in a hospital setting (inpatient) and the other group was treated in a day hospital setting (outpatient).

Outcomes

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?

One NRS⁹ reported outcomes on homecoming stress factors including shame, resentment, negative interaction, social withdrawal, and total homecoming stress. These outcomes were measured at different time points: on return from active duty, admission into the treatment program, discharge from the treatment program, and follow-up three years after discharge. Another NRS⁶ reported outcomes on symptoms of PTSD, such as depression and suicidality, and comorbid psychiatric illnesses. The study reported outcomes before admission into an inpatient psychiatric care and four months after discharge from the treatment program.

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?

The included RCT⁷ examined symptoms of depression, anxiety, and PTSD using 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, six months, 12 months and 18 months follow-up.

The main clinical outcome of interest in one NRS⁸ was severity of depression in both the inpatient and outpatient patient groups. Depression severity was measured by Beck's self-evaluation depression inventory.

Summary of Critical Appraisal

Details of the critical appraisal are found in Appendix A2.

The RCT⁷ presented a hypothesis, and the method of selection from source population and representation, interventions, patient characteristics, and losses to follow-up were described. Estimates of random variability and actual probability values were also provided. Main findings were not described in detail, and it was unclear whether study had sufficient power to detect a clinically important effect.

Two studies^{6,9} both explicitly described their objectives, outcomes, patient characteristics, and outcome data. The study subjects represented the entire population of relevant patients in the subject of interest (i.e., patients with PTSD). All patients were recruited from the same population, and statistical tests used to assess the main outcomes seemed appropriate. Nevertheless, both studies had significant loss of patients to follow-up that may have affected the outcome data.

One NRS⁸ described their objective, outcomes, and outcome data, but the patient characteristics were not well described. As well, there was no loss to follow-up. Study subjects represented the entire population of relevant patients in the region of interest. It, however, was unclear if all patients were recruited from the same population and from what population the patients were recruited.

Summary of Findings

Details of the summary of findings are found in Appendix A3.

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?

Homecoming Stress Measures

One study⁹ compared homecoming stress measures between patients who were admitted to a brief treatment program (n=41) versus those admitted to a long treatment program (n=49). A statistical significance was found in the brief treatment group for three homecoming stress measures including shame, social withdrawal, and total homecoming stress. The findings suggested that a brief treatment program was more effective than the long treatment program. Follow-up scores at three years after treatment, however, tended to converge between both programs.

Post-Discharge Outcome Measures of PTSD

One study⁶ compared the clinical effectiveness of longer inpatient treatment programs with shorter inpatient treatment programs in veterans found months after discharge (n=6,377). After a change in program, which included a decrease in length of stay, there was no significant difference found in post-discharge outcome measures of PTSD, including depression and suicidality. This finding suggested that shortening the length of stay in the program had no impact on the effectiveness.

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?

Symptoms of Depression, Anxiety, and PTSD

In the RCT,⁷ 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. Approximately, 21% of the short-term group patients showed at least one mental health disorder compared to no patients in the long-term group one year after trauma. The authors reported that the differences between short- and long-term groups nearly reached statistical significance for anxiety and PTSD, but were not clear how these probabilities were derived. They concluded that treatments extended to outpatient care seemed to be effective in treating patients with depression, anxiety and PTSD.

Severity of Depression

One study⁸ also compared the clinical effectiveness of inpatient treatment programs (n=36) versus outpatient treatment programs (n=64) for patients with PTSD. No statistical difference was found in depression severity between the inpatient and the outpatient groups according to Beck's depression inventory.

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?

No evidence-based guidelines regarding inpatient treatment programs for patients with PTSD, with or without comorbid substance-related and addictive disorder were identified.

Limitations

Two of the studies^{6,9} relied on veterans with PTSD, who were willing to participate in the follow-up after treatment. One of the studies⁶ reported that veterans, who were successfully followed up, were generally better off than those who were unsuccessful to follow-up (i.e., fewer severe issues with alcohol, drugs, and violence, and fewer psychiatric comorbidities, etc.). This result can be applied to both studies and would affect the external validity of the study findings, as the outcomes may not be applicable to all veterans suffering from PTSD. Furthermore, the RCT⁷ reported a high loss to follow-up, as only 41% of patients completed their follow-up visits. The loss to follow-up can also affect the external validity of the main study outcomes, which may not be applicable to all patients who had a car or motorcycle accident.

The RCT⁷ had a sample size of 113 patients, and the main findings in the study were not described in detail in the results and discussion. The patient population with trauma from traffic accidents further limits the generalizability of the findings.

CONCLUSIONS AND IMPLICATIONS FOR DECISION OR POLICY MAKING

Three of the studies in this report^{6,8,9} examined patients with PTSD, and two of the studies^{6,9} specifically included veterans who were treated for PTSD. One of the studies⁷ included patients who were suffering from injuries from car or motorcycle accidents and 89% of them (101/113) suffered from PTSD.

Data from one RCT⁷ showed that symptoms of depression, anxiety and PTSD were reduced in more patients starting one year after trauma in the long-term group (i.e., inpatient treatment further extended into outpatient care) compared to the short-term group (inpatient treatment). The differences between short- and long-term groups, however, were not statistically significant. Another study⁸ also compared the clinical effectiveness of inpatient versus outpatient treatment programs, and found no statistically significant differences between the treatment groups.

Two studies^{6,9} examined the comparative clinical effectiveness of long- versus short-term inpatient treatment programs; one study⁶ did not find shorter duration in the length of program had an impact on its effectiveness. The other study found shorter treatment programs more effective shortly after discharge, but results tended to converge over time.

No evidence was found on evidence-based guidelines regarding inpatient treatment programs for PTSD.

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, including veterans.

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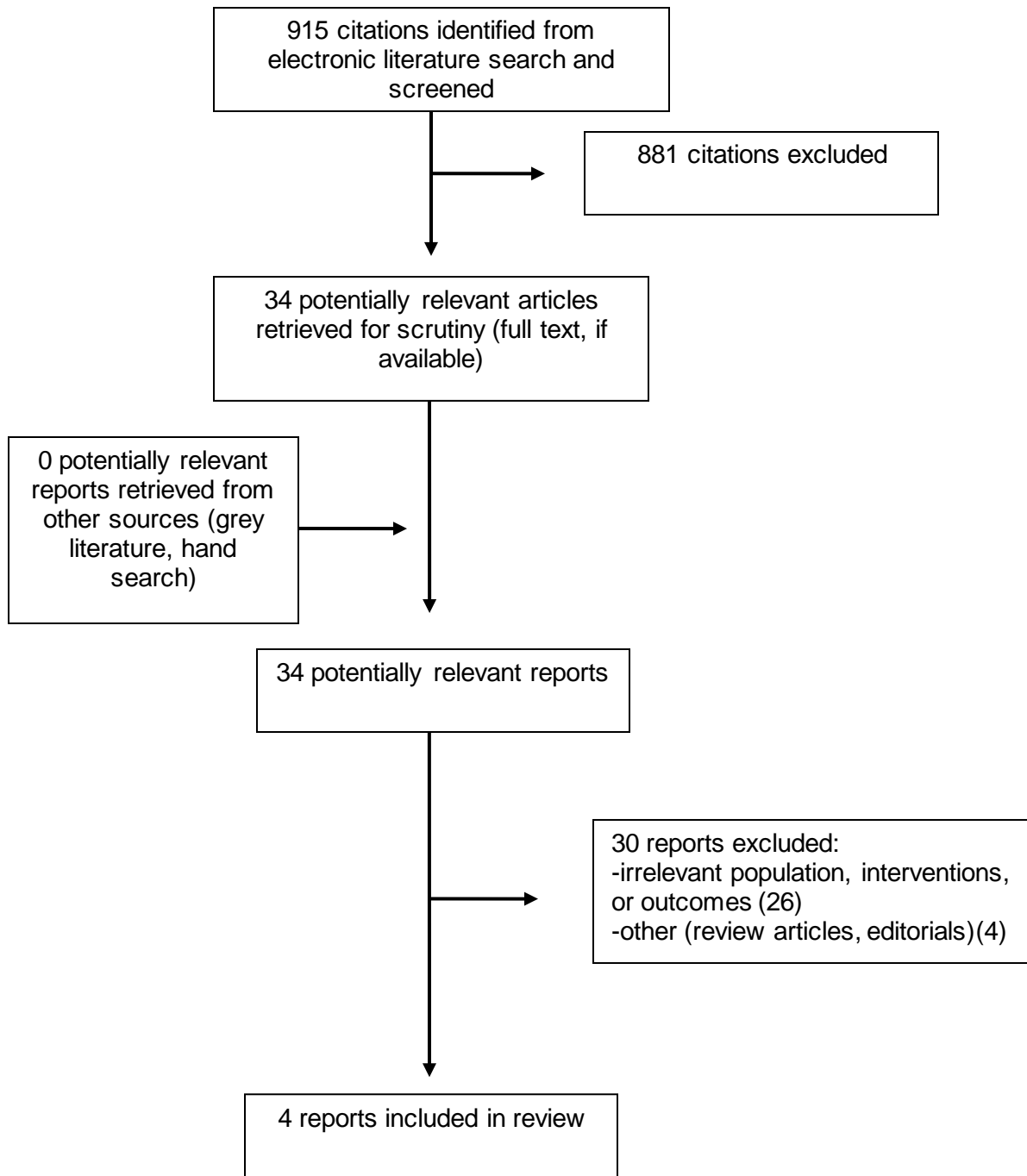
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APPENDIX 1: Selection of Included Studies



APPENDIX 2: Characteristics of Included Publications

Table A1: Characteristics of Included Clinical Studies

First Author, Publication Year, Country	Study Design, Study Objectives	Patient Characteristics, Loss to Follow-Up	Intervention(s)	Comparator(s)	Clinical Outcomes
Tecic, 2011, Germany ⁷	RCT <i>“The aim of this study was to compare short-term inpatient versus continued long-term outpatient psychotherapeutic support”</i> (p 433)	Patients included 59 patients in the short-term group and 54 patients in the long-term group Mean age (SD): Short-term group: 34.1 years (10.7) Long-term group: 35.9 years (12) Gender: Short-term group: 81.4% male Long-term group: 72.7% male Loss to follow-up: 59% of all patients did not complete follow-up visits	Inpatient treatment program (short-term therapy) Program length: up to 8 sessions	Inpatient treatment group (long-term therapy) Program length: short-term inpatient psychotherapy (up to 8 sessions) and up to six sessions of outpatient psychotherapy over a period of 6 months after discharge	Symptoms of depression*, anxiety** and PTSD*** *Measured by Beck’s Depression Inventory **Measured by State-Trait Anxiety Inventory XI ***Measured by Impact of Event Scale-Revised
Ljubicic, 2009, Croatia ⁸	Prospective cohort <i>“...to analyze the severity of depression in patients that were hospitalized and patients treated in the “Day hospital” setting”</i> (p 416)	100 patients who were being treated for PTSD Mean age (SD): Hospitalized group: 47.44 years (6.23) Day hospital: 45.61 years (7.39) Gender: NR Loss to follow-up: None	Inpatient treatment program (hospitalized) Mean program length (SD): 3.71 years (3.19)	Outpatient treatment program (day hospital) Mean program length (SD): 2.85 years (2.90)	Severity of depression* *Measured by Beck’s Depression Inventory

Table A1: Characteristics of Included Clinical Studies

First Author, Publication Year, Country	Study Design, Study Objectives	Patient Characteristics, Loss to Follow-Up	Intervention(s)	Comparator(s)	Clinical Outcomes
Johnson, 2002, USA ⁹	Retrospective cohort “...to measure changes in subjects from both types of programs, as well as at follow-up time points when the veterans were not under the impact of the discharge process, will help to determine the treatment effects on the veterans’ homecoming stress” (p 48)	Patients included 41 veterans from the brief treatment and 49 veterans from the long-term treatment; 124 veterans were contacted, only 90 veterans completed follow-up Mean age (SD): 49.13 years (4.56) Gender: NR Loss to follow-up: 27% of patients did not complete follow-up	Brief inpatient treatment program Program length: NR	Long-term inpatient treatment program Program length: 4 months	Homecoming stress factors* (i.e., shame, resentment, negative interaction, social withdrawal, total homecoming stress) *Measured by a self-reported scale to measure the veterans’ homecoming stress in a standardized manner developed by the authors
Rosenheck, 2001, USA ⁶	Pre and post study “The objective of this study was to evaluate the clinical impact of cost-cutting changes in the delivery of inpatient psychiatric care” (p 168)	Patients included 9482 veterans who were treated for PTSD; only 6397 veterans were successfully followed up Mean age (SD): 48.83 years (5.7) Gender: 98.1% male Loss to follow-up: 33% of patients did not complete follow-up	Inpatient psychiatric care Mean program length (SD): Before program change: 46.18 days (31.27) After program change: 45.49 days (33.72)	None	Symptoms of PTSD*, comorbid psychiatric illnesses *Measured by the short form of the Mississippi Scale for Combat-Related PTSD and a 4-tem PTSD scale developed at the Northeast Program Evaluation Center

NR = not reported; PTSD = posttraumatic stress disorder; RCT = randomized controlled trial; SD = standard deviation

APPENDIX 3: Critical Appraisal of Included Publications

Table A2: Strengths and Limitations of Clinical Studies using Downs and Black¹⁰ link to Downs and Black	
Strengths	Limitations
Tecic, 2011⁷	
<p><i>Reporting</i></p> <ul style="list-style-type: none"> described objective Interventions and patient characteristics clearly described Patients lost to follow-up described <p><i>External Validity</i></p> <ul style="list-style-type: none"> No strengths identified <p><i>Internal Validity</i></p> <ul style="list-style-type: none"> Patients randomized Estimates of random variability and actual probability values provided Method selection from source population and representation described 	<p><i>Reporting</i></p> <ul style="list-style-type: none"> Main findings not clearly described <p><i>External Validity</i></p> <ul style="list-style-type: none"> No limitations identified <p><i>Internal Validity</i></p> <ul style="list-style-type: none"> No limitations identified <p><i>Power</i></p> <ul style="list-style-type: none"> Unclear if study had sufficient power to detect a clinically important effect
Ljubicic, 2009⁸	
<p><i>Reporting</i></p> <ul style="list-style-type: none"> described objective Outcomes to be extracted described in methods section Outcome data clearly described No loss to follow-up <p><i>External Validity</i></p> <ul style="list-style-type: none"> Study subjects represented the entire population of relevant patients in the region of interest <p><i>Internal Validity</i></p> <ul style="list-style-type: none"> The statistical tests used to assess the main outcomes were appropriate 	<p><i>Reporting</i></p> <ul style="list-style-type: none"> Patient characteristics not well described <p><i>External Validity</i></p> <ul style="list-style-type: none"> No limitations identified <p><i>Internal Validity</i></p> <ul style="list-style-type: none"> Unclear what population the patients were recruited from Unclear if all patients recruited from the same population
Johnson, 2002⁹	
<p><i>Reporting</i></p> <ul style="list-style-type: none"> described objective Outcomes to be extracted described in methods section Patient characteristics well described Outcome data clearly described <p><i>External Validity</i></p> <ul style="list-style-type: none"> Study subjects represented the entire population of relevant patients in the region of interest <p><i>Internal Validity</i></p> <ul style="list-style-type: none"> All patients were recruited from the same population The statistical tests used to assess the main outcomes were appropriate 	<p><i>Reporting</i></p> <ul style="list-style-type: none"> No limitations identified <p><i>External Validity</i></p> <ul style="list-style-type: none"> No limitations identified <p><i>Internal Validity</i></p> <ul style="list-style-type: none"> Losses of patients to follow-up may have affected outcome data

Table A2: Strengths and Limitations of Clinical Studies using Downs and Black¹⁰ [link to Downs and Black](#)

Strengths	Limitations
Rosenheck, 2001 ⁶	
<p><i>Reporting</i></p> <ul style="list-style-type: none"> • described objective • Outcomes to be extracted described in methods section • Patient characteristics well described • Outcome data clearly described <p><i>External Validity</i></p> <ul style="list-style-type: none"> • Study subjects represented the entire population of relevant patients in the region of interest <p><i>Internal Validity</i></p> <ul style="list-style-type: none"> • All patients were recruited from the same population • The statistical tests used to assess the main outcomes were appropriate 	<p><i>Reporting</i></p> <ul style="list-style-type: none"> • No limitations identified <p><i>External Validity</i></p> <ul style="list-style-type: none"> • No limitations identified <p><i>Internal Validity</i></p> <ul style="list-style-type: none"> • Losses of patients to follow-up may have affected outcome data

APPENDIX 4: Main Study Findings and Author’s Conclusions

Table A3: Summary of Findings of Included Studies	
Main Study Findings	Author’s Conclusions
Tecic, 2011 ⁷	
<p>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.</p> <p>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)</p> <p>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 ($P = 0.035$).</p> <p><u>Depression BDI</u> mean (SD), number of patients (n)</p> <ul style="list-style-type: none"> • Inclusion <ul style="list-style-type: none"> ○ Short- term: 9.3 (8.3), 56 ○ Long-term: 11.7 (8.0), 51 ○ $p=0.132$ • Discharge <ul style="list-style-type: none"> ○ Short-term: 7.5 (7.4), 45 ○ Long-term: 8.0 (6.0), 42 ○ $p=0.761$ • 6MFU <ul style="list-style-type: none"> ○ Short-term: 6.9 (7.5), 31 ○ Long-term: 9.6 (9.2), 30 ○ $p=0.220$ • 12MFU <ul style="list-style-type: none"> ○ Short-term: 8.1 (12.1), 38 ○ Long-term: 9.0 (9.0), 28 ○ $p=0.749$ • 18MFU <ul style="list-style-type: none"> ○ Short-term: 5.4 (6.7), 37 ○ Long-term: 6.0 (7.1), 23 ○ $p=0.753$ <p><u>Anxiety STAI XI</u> mean (SD), number of patients (n)</p> <ul style="list-style-type: none"> • Inclusion <ul style="list-style-type: none"> ○ Short-term: 43.9 (12.7), 53 ○ Long-term: 48.6 (15.5), 51 ○ $p=0.091$ • Discharge <ul style="list-style-type: none"> ○ Short-term: 37.4 (12.8), 44 ○ Long-term: 40.5 (13.3), 41 ○ $p=0.280$ 	<p><i>“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)</i></p>

Table A3: Summary of Findings of Included Studies

Main Study Findings	Author's Conclusions
<ul style="list-style-type: none"> • 6MFU <ul style="list-style-type: none"> ○ Short-term: 38.5 (14.2), 31 ○ Long-term: 34.8 (12.9), 30 ○ $p=0.299$ • 12MFU <ul style="list-style-type: none"> ○ Short-term: 38.5 (14.6), 36 ○ Long-term: 38.0 (15.8), 27 ○ $p=0.905$ • 18MFU <ul style="list-style-type: none"> ○ Short-term: 35.7 (13.8), 38 ○ Long-term: 37.0 (14.3), 23 ○ $p=0.743$ <p><u>PTSD IES-R</u> mean (SD), number of patients (n)</p> <ul style="list-style-type: none"> • Inclusion <ul style="list-style-type: none"> ○ Short-term: -2.1 (1.7), 51 ○ Long-term: -1.9 (1.9), 50 ○ $p=0.620$ • Discharge <ul style="list-style-type: none"> ○ Short-term: Not collected ○ Long-term: Not collected • 6MFU <ul style="list-style-type: none"> ○ Short-term: -2.6 (2.0), 32 ○ Long-term: -2.6 (1.7), 30 ○ $p=0.999$ • 12MFU <ul style="list-style-type: none"> ○ Short-term: -2.6 (2.2), 38 ○ Long-term: -2.7 (1.6), 27 ○ $p=0.873$ • 18MFU <ul style="list-style-type: none"> ○ Short-term: -3.0 (1.8), 38 ○ Long-term: -2.8 (1.8), 24 ○ $p=0.636$ 	-
Ljubicic, 2009 ^s	
<p><u>Result score from Beck's depression inventory (arithmetic mean)</u></p> <ul style="list-style-type: none"> • Hospitalized (SD): 34.44 (8.46) • Day hospital (SD): 34.58 (7.04) <ul style="list-style-type: none"> ○ $p=0.933$ <p><u>Severity of depression according to Beck's depression inventory</u></p> <ul style="list-style-type: none"> • <i>Hospitalized</i> <ul style="list-style-type: none"> ○ No depression: 0 (0.0%) ○ Mild depression: 1 (2.8%) ○ Moderate depression: 6 (16.7%) ○ Severe depression: 29 (80.6%) • <i>Day hospital</i> <ul style="list-style-type: none"> ○ No depression: 0 (0.0%) ○ Mild depression: 1 (1.6%) 	<p><i>"...there are no statistically significant differences regarding different severities of depression between the two research groups, those hospitalized and those treated in the Day hospital setting" (p 418)</i></p>

Table A3: Summary of Findings of Included Studies

Main Study Findings	Author's Conclusions
<ul style="list-style-type: none"> ○ Moderate depression: 8 (12.5%) ○ Severe depression: 55 (85.9%) ○ $p=0.765$ 	
Johnson, 2002⁹	
<p><u>Homecoming stress measures</u></p> <p><i>Shame</i></p> <ul style="list-style-type: none"> • Brief treatment <ul style="list-style-type: none"> ○ On Return* (SD): 2.77 (0.95) ○ Admission (SD): 2.5 (0.87) ○ Discharge (SD): NR ○ Follow-up (SD): 2.77 (0.88) • Long treatment <ul style="list-style-type: none"> ○ On Return* (SD): 3.12 (0.86) ○ Admission (SD): 2.87 (0.76) ○ Discharge (SD): 2.99 (0.73) ○ Follow-up (SD): 3.05 (0.81) <p><i>Cohort</i> $p<0.05$ <i>Timepoint</i> $p<0.01$</p> <p><i>Resentment</i></p> <ul style="list-style-type: none"> • Brief treatment <ul style="list-style-type: none"> ○ On Return* (SD): 3.85 (0.72) ○ Admission (SD): 3.52 (0.86) ○ Discharge (SD): NR ○ Follow-up (SD): 3.58 (1.01) • Long treatment <ul style="list-style-type: none"> ○ On Return* (SD): 3.79 (0.82) ○ Admission (SD): 3.67 (0.75) ○ Discharge (SD): 3.66 (0.80) ○ Follow-up (SD): 3.57 (0.77) <p><i>Cohort</i> NS <i>Timepoint</i> $p<0.05$</p> <p><i>Negative interaction</i></p> <ul style="list-style-type: none"> • Brief treatment <ul style="list-style-type: none"> ○ On Return* (SD): 1.86 (0.72) ○ Admission (SD): 1.42 (0.42) ○ Discharge (SD): NR ○ Follow-up (SD): 1.54 (0.62) • Long treatment <ul style="list-style-type: none"> ○ On Return* (SD): 1.97 (0.66) ○ Admission (SD): 1.43 (0.48) ○ Discharge (SD): 1.69 (0.64) ○ Follow-up (SD): 1.56 (0.57) <p><i>Cohort</i> NS <i>Timepoint</i> $p<0.001$</p> <p><i>Social withdrawal</i></p> <ul style="list-style-type: none"> • Brief treatment <ul style="list-style-type: none"> ○ On Return* (SD): 3.63 (0.60) ○ Admission (SD): 3.38 (0.49) ○ Discharge (SD): NR 	<p><i>“Results indicate an overall stability in homecoming stress 3 years later in both subsamples and an increase in feelings of shame... Though levels were initially lower among the brief treatment subjects, over time their scores tended to converge, suggesting the influence of regression to the mean in the results” (p 50)</i></p>

Table A3: Summary of Findings of Included Studies

Main Study Findings	Author's Conclusions
<ul style="list-style-type: none"> ○ Follow-up (SD): 3.58 (0.60) ● Long treatment <ul style="list-style-type: none"> ○ On Return* (SD): 3.97 (0.47) ○ Admission (SD): 3.49 (0.48) ○ Discharge (SD): 3.51 (0.51) ○ Follow-up (SD): 3.58 (0.45) <p>Cohort $p < 0.05$ Timepoint $p < 0.001$</p> <p><i>Total homecoming stress</i></p> <ul style="list-style-type: none"> ● Brief treatment <ul style="list-style-type: none"> ○ On Return* (SD): 3.03 (0.43) ○ Admission (SD): 2.71 (0.42) ○ Discharge (SD): NR ○ Follow-up (SD): 2.87 (0.55) ● Long treatment <ul style="list-style-type: none"> ○ On Return* (SD): 3.21 (0.45) ○ Admission (SD): 2.89 (0.43) ○ Discharge (SD): 2.96 (0.46) ○ Follow-up (SD): 2.94 (0.44) <p>Cohort $p < 0.05$ Timepoint $p < 0.001$</p> <p>*On return from active duty</p>	
<p>Rosenheck, 2001⁶</p> <p><u>PTSD, Short Mississippi scale (SD)</u></p> <ul style="list-style-type: none"> ● Pre-treatment: 40.77 (5.62) ● Post-treatment: 40.80 (5.74) <ul style="list-style-type: none"> ○ $p = 0.13$ ● Before program changes*: 40.76 (5.62) ● After program changes*: 40.84 (5.76) <ul style="list-style-type: none"> ○ $p = 0.67$ <p><u>PTSD, 4-item scale (SD)</u></p> <ul style="list-style-type: none"> ● Pre-treatment: 1.79 (1.38) ● Post-treatment: 1.69 (1.34) <ul style="list-style-type: none"> ○ $p = 0.38$ <p><u>Comorbid Psychiatric Illnesses (SD)</u></p> <ul style="list-style-type: none"> ● Pre-treatment: 2.48 (1.27) ● Post-treatment: 2.46 (1.21) <ul style="list-style-type: none"> ○ $p = 0.0001$ <p>*Program changes referring to either a reduction in length of stay or a change from a hospital-based program to a low-cost residential rehabilitation program. Length of stay decreased by 21% by programs that initiated a deliberate reduction in length of stay. Patients that changed to a residential model experienced a decline a length of stay of 6%.</p>	<p>“...shortening length of stay was associated with no deterioration in effectiveness” (p 179)</p>

BDI = Beck Depression Inventory; IES-R = Impact of Event Scale-Revised; MFU = month follow-up; NR = not reported; NS = not significant; PTSD = post-traumatic stress disorder; SD = standard deviation; STAI = State-Strait Anxiety Inventory

APPENDIX 5: Additional References of Potential Interest

Non-Randomized Study – Alternate Comparator

Creamer M, Forbes D, Biddle D, Elliott P. Inpatient versus day hospital treatment for chronic, combat-related posttraumatic stress disorder: a naturalistic comparison. *J Nerv Ment Dis.* 2002 Mar;190(3):183-9.

[PubMed: PM11923653](#)