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Enhancing the population impact of collaborative care interventions: mixed method development and implementation of stepped care targeting posttraumatic stress disorder and related comorbidities after acute trauma ☆

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Abstract

Objective: The objective of the study was to develop and implement a stepped collaborative care intervention targeting posttraumatic stress disorder (PTSD) and related comorbidities to enhance the population impact of early trauma-focused interventions.
Method: We describe the design and implementation of the Trauma Survivors Outcomes and Support study. An interdisciplinary treatment development team was composed of trauma surgical, clinical psychiatric and mental health services "change agents" who spanned the boundaries between frontline trauma center clinical care and acute care policy. Mixed method clinical epidemiologic and clinical ethnographic studies informed the development of PTSD screening and intervention procedures.
Results: Two hundred seven acutely injured trauma survivors with high early PTSD symptom levels were randomized into the study. The stepped collaborative care model integrated care management (i.e., posttraumatic concern elicitation and amelioration, motivational interviewing and behavioral activation) with cognitive behavioral therapy and pharmacotherapy targeting PTSD. The model was feasibly implemented by frontline acute care masters in social work and nurse practioner providers.
Conclusions: Stepped care protocols targeting PTSD may enhance the population impact of early interventions developed for survivors of individual and mass trauma by extending the reach of collaborative care interventions to acute care medical settings and other nonspecialty posttraumatic contexts.

Keywords: PTSD; Stepped collaborative care; Acute care; Population impact; Traumatic injury

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1. Introduction

Traumatic events are highly prevalent in the United States and are a major cause of medical and psychiatric morbidity [1–3]. Each year, between 1.5 and 2.5 million American civilians require hospitalization for the treatment of traumatic physical injury [1,4–6]. Traumatic injury accounts for approximately 12% of medical expenditures in the United States [7]. From a global perspective, approximately 16% of the world's burden of disease is attributable to traumatic injuries [8].

Seriously injured patients are at high risk for developing posttraumatic stress disorder (PTSD) and related comorbid conditions, such as depression and substance abuse/dependence [9–16]. Between 10% and 40% of physically injured American civilians may go on to develop symptoms consistent with a diagnosis of PTSD [9,17–20]. Posttraumatic stress disorder makes an independent contribution to posttraumatic functional limitations and diminished quality of life above and beyond the impact of injury severity and medical conditions [9,20–24]. Posttraumatic stress disorder is associated with increased costs to society; these costs appear to be in part secondary to increased health care costs [2,25–27].

Effective trauma-focused early interventions delivered in real-world nonspecialty mental health settings face the challenge of incorporating both patient-centered supportive care and evidence-based treatment targeting PTSD and related comorbidities [28–33]. Efficacy research suggests that individuals with posttraumatic psychological symptoms, including injured trauma survivors, may respond to early cognitive behavioral psychotherapeutic (CBT) interventions [28,29,34–40]. Pharmacologic interventions may also be effective in the prevention and treatment of PTSD [39–42]. Therefore, early interventions that target engagement of injured trauma survivors and the initiation of evidence-based PTSD treatments constitute an important investigative focus.

Few investigations have successfully delivered early psychotherapeutic and psychopharmacologic interventions to representative samples of acutely exposed disaster, injury or combat survivors [43,44]. Using randomized effectiveness designs [45], mental health services researchers have demonstrated that combined collaborative care interventions can improve symptomatic outcomes for patients with depressive and anxiety disorders who are treated in primary care medical settings [26,46–55]. Commentary from the emerging field of dissemination/implementation research has encouraged enhanced focus on understanding intervention population impact and clinical trial generalizability as a means of furthering the translation of treatments to real-world practice settings [56–62].

This design paper [52,63–67] outlines the development and implementation of the Trauma Survivors Outcomes and Support (TSOS II) investigation. The overarching goal of the research program was to expand the reach of collaborative care interventions to injured trauma survivors treated in the acute care medical setting. The specific aim of the TSOS II study was to test the effectiveness of an early combined intervention to improve the quality of mental health care for acutely injured trauma survivors who require primary care and community follow-up.

The present investigation was informed by two small-scale pilot studies conducted by the investigative team [43,44]. Both studies demonstrated the feasibility of the combined early collaborative care intervention procedure for acutely injured trauma survivors and provided preliminary data on treatment effects. Patients recruited into the pilot trials were not required to have PTSD, and only 20%–30% of patients had symptoms consistent with a diagnosis of PTSD at any assessment point. Unlike prior investigations, in TSOS II, we screened injured trauma survivors twice for high levels of PTSD symptoms. The investigation aimed to determine whether early stepped collaborative care could diminish PTSD symptoms and related comorbid conditions among injured trauma survivors randomized to the intervention condition when compared to usual care controls.

2. Preliminary work and conceptual frameworks informing collaborative care intervention development

2.1. Overview

Organizational change agent models, clinical epidemiology and clinical ethnography are foundational methodological approaches for the acute care research program. These frameworks are discussed in separate sections.

2.2. Organizational change agent model

Co-investigators on the intervention development team embodied an organizational "change agent" approach [45,68,69]. Members of the interdisciplinary treatment development team included trauma surgeons, psychiatrists, psychologists, biostatisticians, social workers, pediatricians and other trauma center critical care providers, who simultaneously functioned as frontline providers, clinical investigators, health services researchers and local and national trauma center policy change agents. Thus, team members developed and implemented clinical interventions while simultaneously addressing local organizational and national trauma center policy changes. As an example, the trauma surgical team members (G.J.) have previously spearheaded national American College of Surgeons policy mandates for alcohol screening and intervention as a requisite for trauma center accreditation [45,70,71]. A central aim of the current investigation is to conduct a definitive trial of stepped collaborative care targeting PTSD that utilizes the same "policy fulcrum" of American College of Surgeons mandates to broadly implement mental health screening and intervention services as a requisite for trauma center accreditation. With regard to input/output assessments, the "change agent" interdisciplinary team approach