



TelePain: Primary care chronic pain management through weekly didactic and case-based telementoring



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ABSTRACT

Chronic pain is a significant problem among military personnel and a priority of the military health system. The U.S. Army Surgeon General's Pain Management Task Force recommends using telehealth capabilities to enhance pain management. This article describes the development and evaluation of a telehealth intervention (TelePain) designed to improve access to pain specialist consultation in the military health system. The study uses a wait-list cluster controlled clinical trial to test: 1) effectiveness of the intervention, and 2) interviews to assess barriers and facilitators of the intervention implementation. The intervention involves a didactic presentation based on the Joint Pain Education Curriculum followed by patient case presentations and multi-disciplinary discussion via videoconference by clinicians working in the military health system. A panel of pain specialists representing pain medicine, internal medicine, anesthesiology, rehabilitation medicine, psychiatry, addiction medicine, health psychology, pharmacology, nursing, and complementary and integrative pain management provide pain management recommendations for each patient case. We use the Pain Assessment Screening Tool and Outcomes Registry (PASTOR) to measure patient outcomes, including pain, sleep, fatigue, anxiety, and depression. This article reports some of the challenges and lessons learned during early implementation of the TelePain intervention. Weekly telephone meetings among the multisite research team were instrumental in problem solving, identifying problem areas, and developing solutions. Solutions for recruitment challenges included additional outreach and networking to military health providers, both building on existing relationships and new relationships.

1. Introduction

Chronic pain is a significant problem among U.S. military personnel. Approximately 44% of active duty military personnel experience pain following return from deployment, compared with 26% of the general public who experience chronic pain [1]. Pain due to injuries, sustained both on and off the battlefield, is a leading cause of short- and long-term disability among military personnel [2–4]. Diagnosis and treatment of pain among the military population can be challenging due to common comorbid conditions such as traumatic brain injuries, pre-concussive syndrome, post-traumatic stress disorder, and behavioral health disorders [5].

To address this problem, the Military Health System has made chronic pain management a priority. In 2009, the U.S. Office of the Army Surgeon General chartered the Pain Management Task Force

(PMTF) to develop a comprehensive pain management strategy [6]. The PMTF's 2010 final report identified 109 recommendations to be implemented, in phases, across the continuum of military medical care to improve pain management. These recommendations incorporate multimodal and interdisciplinary pain strategies and formed the basis for the U.S. Army Comprehensive Pain Management Campaign Plan [7]. The plan defines several goals and objectives including identifying and implementing standards for training and pain care.

The plan also recognizes that by partnering with the Department of Defense, the Department of Veterans Affairs network, and civilian and academic institutions, they can leverage expertise in improving pain care within the military health system. One example is having pain management specialists at academic institutions use videoconferencing technology to provide pain consultation to health care providers. The PMTF recommends expanding this and other uses of telehealth to

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improve pain care regardless of geographical location. The goal of telehealth is to increase the knowledge, confidence, and pain management skills of primary care providers (PCPs). Telehealth's benefits to PCPs have included satisfaction and learning about best practices without having to travel to medical conferences [8–10]. One successful telehealth model using provider to provider consultation and professional education is Project ECHO (Extension for Community Healthcare Outcomes) [11]. The Project ECHO model has been used to provide a clinician-to-clinician educational forum on pain management—ECHO Pain (Chronic Pain and Headache Management TeleECHO Clinic)—on best pain management practices [9]. In 2012, the Army adopted the Project ECHO model to deliver pain management consultation and education throughout the U.S. Army Medical Regional Commands.

At the University of Washington (UW) in Seattle, a telehealth intervention for improving chronic pain care (TelePain) was first implemented in 2006 and merged with Project ECHO in 2011 [12,13]. TelePain has been found to improve quality of life for patients with chronic pain [14]. For this study, the TelePain intervention provides pain management consultation for military PCPs at the Madigan Army Medical Center (MAMC) on Joint Base Lewis-McChord in Tacoma, Washington, other sites located in the Western Regional Medical Command, and the Veterans Administration Puget Sound Health Care System.

1.1. Research question

The purpose of the Military TelePain study is to test the effectiveness of the telehealth intervention for chronic pain management in providing expertise to (1) help military PCPs deliver safe and effective pain management care and (2) improve military patients' abilities to self-assess and manage chronic pain symptoms at home.

2. Overview of study

2.1. Methods

Study Design. This study uses a wait-list cluster controlled clinical trial with mixed methods to evaluate the TelePain intervention for chronic pain management. The aims of the study are to (1) evaluate the effectiveness of TelePain on pain impact among military patients after 2 months of participation; (2) evaluate the effectiveness of the intervention on quality of life, anxiety, depression, fatigue, and constipation among patients at 2 months; (3) evaluate the effectiveness of the intervention on PCP knowledge and attitudes regarding pain and on PCPs' perceived competence in treating symptoms after completion of the study; (4) describe the pain management patterns of use, strategies, and experiences of military patients; and (5) describe the barriers and facilitators to implementation of the TelePain intervention. All study procedures were approved by the UW Institutional Review Board.

At study entry, PCPs and their patients are assigned by a nonrandom method to either the intervention or the wait-list control arm. PCPs who are designated as Army Primary Care Pain Champions or pain management experts at MAMC are assigned to the intervention arm. PCPs who are not designated pain champions are also eligible to participate in the intervention arm if they agree to present at least one of their patients during a TelePain session. An equal number of matched PCPs are assigned to the control arm. To prevent contamination, control providers are not from the same clinic as intervention providers. Patients are assigned to the same arm as their PCP. Patients remain in the study for 12 weeks; PCPs participate in the study until all of their enrolled patients complete the study activities.

The study aims to enroll 24 PCPs and 120 patients. A power calculation was performed using *Optimal Design for Multi-level and Longitudinal Research* [15], which allows for the clustering of providers and patients. Because sample size requirements will be the largest for cross-sectional, clustered analyses and the primary analyses are

clustered, we estimated sample sizes for those analyses. Estimates are based on the following assumption: (1) an intraclass correlation coefficient of 0.20; (2) an average cluster size of 8, assuming an average of 8 patients per provider; (3) a small effect size of 0.20; and (4) alpha of 0.05. With a sample size of 120 patients, we have power of 0.80 to detect the small effect size of 0.20.

Provider Participants. PCPs include physicians, physician assistants, and nurse practitioners caring for patients diagnosed with chronic pain. For this study, PCPs meet with the research team and provide consent after reading the study information statement. Study measures are completed at this time and at the end of the study.

The participating PCPs identify eligible patients in their caseload using the following criteria: (1) at least 18 years of age, (2) have been diagnosed with chronic pain, (3) have a pain score that is 2 or higher on a scale of 0–10, (4) have functional fluency in English, (5) have no or only mild cognitive impairment, and (6) have no problems communicating by phone because of hearing assistive devices. The research team also identifies potentially eligible patients from the MAMC opioid prescription database. PCPs receive a \$100 gift card for each patient who agrees to participate in the study. (In accordance with Department of Defense regulations, PCPs have to complete study surveys during non-duty time in order to be eligible for the gift cards.) PCPs in the intervention arm also receive free continuing medical education (CME) credits after participating in a study-related TelePain session.

Patient Participants. Members of the research team contact potential patient participants by phone to confirm eligibility. If the patient is eligible, the team member reads the consent form, answers any patient questions, and obtains and documents the patient's agreement to participate in the study. Patients who agree to participate complete baseline questionnaires by phone and then receive instructions on how to complete the online Pain Assessment Screening Tool and Outcomes Registry (PASTOR) assessment. Both intervention and control patients report their symptoms every 2 weeks for 8 weeks and then one more time at 12 weeks. All patients receive a \$50 gift card after completing the baseline survey and a \$50 gift card after completing the survey at the end of study, if they completed their surveys on non-duty time.

3. Description of the intervention

The TelePain intervention is provided through low-cost, commercially available technology and has two components: (1) military PCPs receive pain management recommendations for pain cases through video case conferences with other participating PCPs and external pain and symptom management experts, and (2) military PCPs attend a didactic presentation based on the Joint Pain Education Program Curriculum [16].

The goal of the intervention is to use case-based learning to (1) improve PCPs' ability to manage complex pain cases, (2) support evidence-based practice, and (3) demonstrate an interdisciplinary pain management approach. Case conferences by videoconference are provided weekly for 90 min and includes expert pain and symptom management consultants from the military, Veterans Administration, and UW. The consultants' expertise span pain medicine, internal medicine, anesthesiology, rehabilitation medicine, psychiatry, addiction medicine, health psychology, pharmacology, nursing, and complementary and integrative pain management. PCPs can interact with the consultants and with other participating providers during the TelePain session. Brief didactic presentations on chronic pain care topics are also provided during the sessions based on the Joint Pain Education Program Curriculum (see Table 1) [16]. The curriculum was identified through a collaborative effort between the Department of Defense and the Department of Veterans Affairs and addresses a wide variety of pain problems and therapeutics.

In the intervention arm, PCPs present each participating patient's de-identified clinical case at a TelePain session within the first 4 weeks of the patient's study enrollment and again at the end of the patient's

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