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STarT Back Tool Decreases Chronic Low Back Pain in Military Service Members

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Abstract

Background: Low back pain (LBP) accounts for millions of outpatient visits, affects military readiness, is costly to the Military Health System, and is a common reason for long-term disability and compensation. For this reason, the following clinical question was developed: For active duty patients from 18-50 years old with acute LBP does utilizing a risk stratification and prevention index tool in addition to current practice prevent progression to chronic LBP?

Methods: The Keele STarT Back tool was used in patients who presented with acute LBP in primary care. The team performed a retrospective review of active-duty patients enrolled in Robinson Health Clinic with acute LBP within the last year. An educational brief, handouts, and the Back Book were delivered to staff to guide acute LBP management. After three months of implementation, a second chart review was completed to compare and evaluate the findings.

Results: Compared to the retrospective review, utilization of the SBT and its stratified care approach determined a 48% reduction in chronic LBP, a 30% decrease in extended profiles, an 18% decrease in CNS depressants, and a 60% improvement in disability scores.

Conclusions: The STarT Back tool decreases chronic LBP in military members, increases readiness, and has potential to save millions for the Military Health System and Veterans Affairs. Future employment of the SBT at other military treatment sites would provide a larger sample size and longitudinal evaluation of the tool's impact. These results will support VA/DoD CPG level changes to LBP management throughout the DoD.

Keywords: STarT Back tool, low back pain, military service members, musculoskeletal, physical therapy, behavioral health

STarT Back Tool Decreases Chronic Low Back Pain in Military Service Members

During a five-year surveillance analysis conducted by Clark and Hu (2015), it was determined that LBP diagnoses were associated with more than six million outpatient healthcare encounters among U.S. Armed Forces. The management of LBP patients varies widely across the spectrum depending on the severity and source of pain. For this cause, the Clinical Practice Guidelines (CPG) for the diagnosis and treatment of LBP were developed by the Department of Veterans Affairs (VA) and the Department of Defense (DoD). It generalizes recommendations in the diagnostic approach, self-care education, non-pharmacologic, non-invasive therapies, and imaging criteria (U.S. Department of Veterans Affairs, 2017). While this CPG is evidence-based, the generalized approach in the management of acute, or new-onset, LBP is ineffective in the secondary prevention of chronic LBP (lasting longer than 12 weeks) and leads to lifelong LBP (Mattila, Kyrolainen, Santtila, & Pihlajamaki, 2017).

Early and accurate treatment, especially non-pharmacologic, is required to prevent the progression of acute complaints to chronic conditions (Chou et al., 2017). However, non-pharmacologic treatments are underutilized due to a lack of knowledge and confidence in these evidence-based practices. Vanneman et al. (2018) conducted a retrospective study to examine the management of chronic pain in Veterans Health Administration (VHA) facilities; the study concluded about 65 percent of VHA patients with a LBP diagnosis did not receive non-pharmacologic treatment. Patients with acute LBP often do not recover with conservative treatment consisting of advice, reassurance, and simple analgesia alone (Traeger et al., 2019). Additionally, the evaluation of the management of pain diagnoses is a priority for the Military Health System, as chronic pain diagnoses have increased among soldiers (Clark & Taubman, 2015). Moreover, a critical review of LBP guidelines by Chetty (2017) demonstrated a need for

an accurate prognostic tool and a restructuring of the utilization of the CPG in the treatment of acute LBP to prevent chronic LBP. An alternative to preventing LBP, which is difficult in military service members with labor-intensive occupations, is secondary prevention, where the goal is to prevent the progression to chronic LBP. A prognostic tool and stratified care approach will improve the utilization of the therapies recommended in the VA/DoD LBP clinical practice guideline (2017), thus promoting early accurate treatment. This evidence-based project will advance the practice in LBP management and decrease the prevalence of chronic LBP in military service members.

Significance of the Problem

The World Health Organization reports low back pain as one of the top 10 high burden diseases globally, affecting 60 to 70 percent of adults, and the top reason for inactivity (Duthey, 2013). LBP causes more disability-adjusted life years than HIV, cancer, and preterm births (Duthey, 2013). In the U.S. population, the incidence of LBP carries a financial impact of over $85 billion dollars annually (Hartvigsen et al., 2018). In the U.S. military active component, LBP diagnoses affect 223,094 service members annually and lead to increased direct health care and military operational costs (Clark & Hu, 2015).

Often injuries associated with LBP occur on duty and account for 36 percent of occupational injuries (Slaughter, Frith, O'Keefe, Alexander, & Stoll, 2015). Military service members are not exempt from the rising prevalence of LBP and the associated healthcare expenses when compared to the civilian population. This is due to their rigorous physical demands while fulfilling their missions. The analysis by Clark and Hu (2015) identified a 34 percent increase in LBP diagnoses annually from 2010 to 2014. The disability associated with

LBP impacts military readiness. According to Childs et al. (2014), it is a primary cause of medical evacuation for service members during deployment and limits their return to duty.

Clinical Question (PICOT)

For active duty patients from 18 to 50 years old with acute LBP (P) does utilization of a risk stratification and prevention index tool (I) in addition to current practices (C) decrease the progression to chronic low back pain (O).

Focus Areas

The project's primary focus was to decrease the progression of acute low back pain into chronic low back pain in non-traumatic back injuries for active-duty service members by early referrals and utilization of an interdisciplinary team approach. By highlighting the many factors involved in the development of chronic pain, primary care providers (PCP) can be empowered with the appropriate resources to mitigate the modifiable risk factors. The short-term goal was to increase the confidence of PCPs in decision-making strategies for acute LBP. This can be accomplished by clarifying who requires early interventions and by providing directives for patients who meet the criteria for interventions outside of the primary care realm. The under-treatment of high-risk patients and the over-treatment of low-risk patients decreases the quality of care and efficiency of resources (Wippert et al., 2017). The goal for low-risk patients was to eliminate unnecessary interventions. Risk stratified care plans facilitated appropriate care recommendations in patients who were medium and high-risk for chronic LBP (Hill et al., 2011). The long-term goal was to create a new standard operating procedure that included a comprehensive algorithm for acute LBP treatment in primary care. While the CPG clearly defines what to do with red flag symptoms, it is not as explicit with other flag categories; yellow, blue, and black (Wippert et al., 2017). Creating a strong bridge between primary care and other

key personnel, i.e. physical therapy (PT), behavioral health (BH), social work, unit commanders, etc., can help create a holistic approach to healing and recovery from acute LBP.

Relevance to Military Nursing

The escalating prevalence of LBP, inconsistency in care, and substandard scores in the Healthcare Effectiveness Data and Information Set (HEDIS) in the management of LBP demands a call of action to nurse leaders (Military Health System, 2016). The nursing profession is an essential participant in the development of strategies and processes that promote health, increase productivity, reduce rising health care expenditures, and close gaps in continuity of care for LBP (Slaughter et al., 2015). Evidence has acknowledged millions could be saved with improved utilization of LBP therapies by all DoD providers (Lin, Haas, Maher, Machado, & van Tulder, 2011). There is an opportunity for advanced practice registered nurses (APRN) to translate evidence-based tools into practice. Military APRNs are forefront leaders that ensure the appropriate use of resources and evidence-based practices to guarantee service members recover from injury and return to duty. APRNs are dedicated to providing quality patient care that considers direct and indirect costs and provides treatments that have shown the most benefit for patients long term. This project's efforts align with the Quadruple Aim framework of improved readiness, better health, and better care, at a lower cost (Defense Health Program Enterprise, 2018). Ultimately, identifying effective secondary prevention strategies for acute LBP will mitigate progression to chronic LBP and the subsequent costs related to health care spending and well-being.

Literature Review

PubMed and PowER databases were used for the search. These databases provided opportunities to seek credible full-text articles from various journals, books, and published sites.

Table 1

Literature Search

Search Inclusion	2014 to present, English only, primary research studies, systematic reviews, meta-analysis, case studies, expert opinions, stepwise approach, early interventions for acute low back pain, prevention of chronic back pain.
Keywords	LBP, prognostic tools, acute low back pain, chronic low back pain, risk reduction strategies, primary care, and English.
Exclusion criteria	Pediatric and geriatric populations, oncology and cancer patients, opioid therapy, trauma care, and educational articles.

The keywords listed in Table 1 were used in combination to retrieve relevant articles on the background of our topic, the proposed intervention, evidence-based practices, and previous interventions that succeeded in meeting guidelines for LBP. There are a limited number of case studies specific to the military population; therefore, we expanded our search to include civilian populations. The exclusion and inclusion criteria identified 122 sources. Eighty-two articles were excluded because they were reports of the best treatment regimens of LBP, instead of predictive or prognostic tools for chronic LBP prevention. Forty full-text articles were assessed and 28 were excluded because they did not assist in answering our PICOT question. Twelve studies were selected for the synthesis.

The articles found were classified with Melynk's levels of evidence. The levels ranged from level one to six. The synthesis included two prospective cohort studies, two randomized control trials, one meta-analysis, one cluster-randomized trial, two cross-sectional cohort studies,

one qualitative survey, two secondary analysis, and one systematic review. The sample sizes ranged from 52 to 2758. Eight articles evaluated the Keele STarT Back tool (SBT), one evaluated the Better Back Model, two evaluated the PICKUP tool, and one evaluated the efficacy of predictive tools.

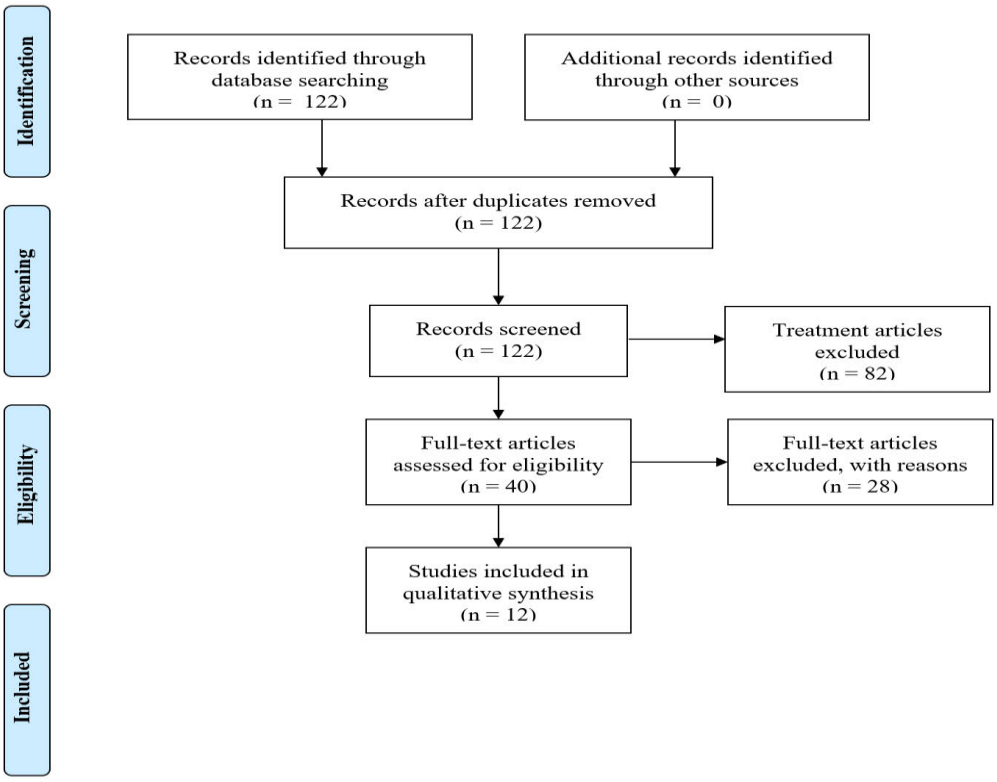

Figure 1. PRISMA Flow Diagram visually depicts the flow of selecting evidence through each phase of the literature review process. Adapted from "The PRISMA 2020 Statement: An Updated Guideline for Reporting Systematic Reviews," by M. J. Paige, J. E. McKenzie, P. M. Bossuyt, I. Boutron, T. C. Hoffmann, C. D. Mulrow … D. Moher, 2021, *BMJ 2021, 372,* p. N7. Copyright 2015 PRISMA.

Evidence-based Solution

The primary prevention of low back pain remains a tedious task. With 84 percent of the population experiencing LBP at some point in their lives, a viable goal is preventing acute LBP from becoming chronic (Wippert et al., 2017). While there were other LBP prognostic tools, the SBT was the superior choice. The tool not only calculates prognostic risk for developing chronic

LBP, but also provides evidence-based treatment recommendations for primary care clinicians. Additionally, the tool is associated with improvement in health-related quality of life, fewer missed workdays, and a reduction in healthcare use (Hill et al., 2011).

The Keele STarT Back Tool has proven that it directly correlates to patient outcomes, specifically disability (Beneciuk et al., 2013). The tool has been validated in several countries throughout the world, from the United Kingdom (U.K.) to the United States (U.S.), and even Africa (Schmidt & Naidoo, 2020). Despite what language it is translated into, the SBT continues to prove its efficacy in the global effort to decrease LBP morbidity (Schmidt & Naidoo, 2020). Utilizing this tool helps to reduce unnecessary interventions for low-risk patients, such as repeat clinical encounters and specialty referrals to PT (Hill et al., 2011). The SBT's detailed treatment regimens per risk category removes the intuition-based approach. It explores both physical and psychological factors that contribute to chronic pain development. Management of high-risk patients has better outcomes than those who received standard treatment (Hill et al., 2011). Evidence shows significant cost savings of £34.39 in the U.K., where the tool was developed; this is equivalent to $42.47 in savings per patient in U.S. currency (Keele University, 2017).

The STarT Back tool includes a nine-question screening assessment of physiological and psychological symptoms to determine the risk and prognosis of non-specific acute LBP. The risk groups are categorized as low, medium, and high. Each question has a score of 0 or 1. Questions cover physical and psychological symptoms the patient may have experienced over the past two weeks. The questionnaire is simple and takes no more than five minutes to complete and score; the first eight questions are: agree (1 point) or disagree (0 points). The ninth question assesses the overall impact of back pain in the last two weeks, ranging from not at all (0 points) to extremely (1 point). If a patient scores 0 to 3 on the total score, they are considered low risk. If

the patient scores 4 to 5 on questions 5 through 9, they are considered high risk. Lastly, they are considered to be medium-risk if they fall anywhere in between low and high ranges. Once the patient's risk-group is determined there are stratified intervention recommendations for PCPs, physical therapists, and behavioral health consultants (BHC) (Hill et al., 2011).

Every LBP encounter incorporated a clinical assessment and education addressing their back pain symptoms, including how to appropriately incorporate activity in their recovery (Hill et al., 2011). The utilization of an educational adjunct, "The Back Book", helped reinforce these talking points. Low-risk patients received reassurance and guidance to seek further medical care if symptoms worsen. Moderate and high-risk groups are referred to PT. A physical therapist performed individualized assessments to ensure their presentation corresponded appropriately with their screening score. These evaluations determined recommended exercises, stretches, frequency, and follow-up. These individualized sessions were focused on increasing function through a combination of evidence-based modalities, from verbal coaching to manipulation and acupuncture. Recommendations for the high-risk group also included a psychological evaluation from a BHC to support mood and pain perception. Successful treatment of these patients is truly a team approach.

According to the acute LBP CPGs, there are red flags that require immediate imaging. In addition to red flags, three other categories help with risk stratification: yellow, blue, and black. Clinical red flags are connected to biomedical factors, clinical yellow flags are psychological or behavioral factors, blue flags are social and economic factors, and black flags are occupational factors (Main, Kendall, & Hasenbring, 2012; Main & Williams, 2002). Understanding the various flag categories provides key components for the development of risk stratification tools and guides providers for a more holistic approach in treating LBP (Wippert et al., 2017). In

conjunction with the SBT score, initiating the appropriate treatment regimen by risk category can further decrease the development of chronic LBP (Wippert et al., 2017). Utilization of the PT department, along with BHCs, can support a decrease in chronicity experienced by service members. Combatting the physical and psychological components early in the treatment process can provide coping mechanisms to prevent catastrophizing the pain and provide education on exercises that prevent reinjury (Hill et al., 2011).

Organizing Framework

This project was guided by the Ottawa Model of Research Use developed by Logan and Graham in 1998, which was later revised in 2004. The Ottawa model is an example of planned change theory (Graham & Logan, 2004). The main objective of this model is to establish and maintain change on an organizational and systems level. This is accomplished through knowledge synthesis, dissemination, exchange, and application (Graham & Logan, 2004). The model consists of three phases: assessing barriers and supports, monitoring intervention and degree of use, and evaluating outcomes (see Figure 2) (White, 2016).

The first phase of this model focuses on identifying an evidenced-based innovation, potential adopters, and the practice environment. Following this model, the project team sought direction from the military treatment facility's senior leader, the hospital commander, in the selection of the evidenced based-project. The commander's primary initiatives were to reduce musculoskeletal (MSK) injury and improve LBP HEDIS measures. This feedback was used to guide the literature review, assess current and previous practices, implement the use of an evidence-based tool, and evaluate outcomes. Within this phase, the Ottawa model advises gaining insight into attitudes, knowledge, skills, concerns, and current practices of the potential adopters. The project team partnered with the primary care clinic leaders to obtain support and

suggestions from key stakeholders. The second phase of the Ottawa Model centers on monitoring implementation strategies and promoting adoption. The project team oversaw the implementation of the selected tool and addressed barriers. To promote adoption we also provided education sessions that met clinic training schedules, opportunities for individual face-to-face training, and standardized informational handouts. We addressed barriers through active engagement by a team member who reviewed daily scheduled encounters, provided reminders to clinicians, and reinforced the use of the tool. The last phase of the Ottawa Model required the evaluation of outcomes. To evaluate the impact on patients, pre and post-implementation data were compared and analyzed. The impact on practitioners was assessed during a post-implementation sensing session with key leadership. The project's results were compared to prior studies in other populations to identify the impact on an organizational level.

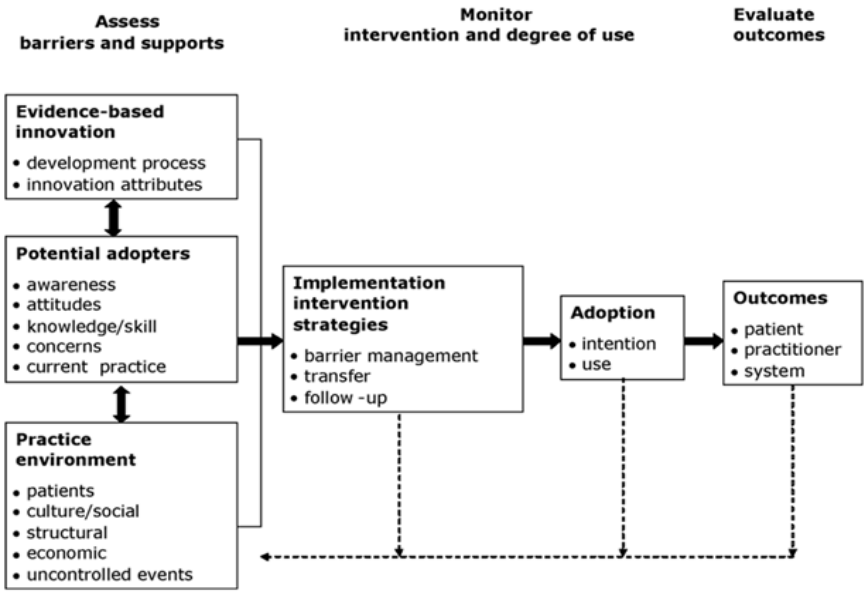

Figure 2. Organizing Framework: Ottawa Model of Research Use. Adapted from "Innovations in knowledge transfer and continuity of care," by I. D. Graham and J. Logan, 2004, *Canadian Journal of Research, 36,* p. 89.

Project Design

General Approach

This evidence-based project sought to evaluate the implementation of a risk stratification tool as a supplement to the current CPG to prevent acute LBP from progressing to chronic LBP in a military population. The intent was to encourage early intervention and structured PT through a streamlined screening tool to prevent long-term MSK pain.

Setting and Population

The setting for this project is Fort Bragg, North Carolina, home to the 82nd Airborne Division, XVIII Airborne Corps, U.S. Army Special Operations Command, and U.S. Army Reserve Command. Fort Bragg is the largest Army installation in the world by population. Fort Bragg has several outpatient care clinics that provide care to over 200,000 active duty service members, reservists, military dependents, and retirees. We selected Robinson Health Clinic (RHC) for our project to capture a population of service members with a high incidence of MSK injuries and physically demanding military occupational specialties (MOS). RHC currently provides care for 32,000 enrollees. The targeted population consisted of only active duty service members aged 18 to 50 presenting to the clinic with complaints of acute LBP.

Procedural Steps

The Uniformed Services University and Womack Army Medical Center conducted an Institutional Review Board (IRB) review (see Appendix C) of this project before the project was implemented. Once the IRB determination was obtained the Ottawa Model of Research Use was utilized to perform the procedural steps for this project.

Phase One: Assess the need for practice change. We identified potential adopters by reviewing the WAMC 2019 Performance Plan and engaging key leadership at WAMC and RHC.

A literature review was conducted to review current practices and identify areas that could be improved. This led to identifying the best evidence-based intervention to answer the clinical question. The final step in this phase was identifying the practice environment. A pre-implementation chart review was completed to capture the prevalence and outcomes of acute LBP in the selected population. The list of patients was obtained from a systematic search conducted by a population health nurse to identify patients seen with the ICD-10 code M54.5, low back pain. A total of 150 charts were included in this pre-intervention review. Collected data included follow-up visits for LBP, referrals, prescriptions, and profile status.

Phase 2: Monitor project implementation and adoption. Several steps were taken to overcome barriers and promote the adoption of the new practice. The clinic providers and their medical teams were educated on the inclusion criteria and proper use of the SBT. A hardcopy of the nine-item screening tool was supplied to the providers and support staff, along with scoring instructions and recommended interventions. To make the tool even more accessible, all staff members had direct access to the SBT calculator on a hyperlinked desktop icon. There were two standardized education sessions; one specific to the medics, nurses, and providers, as well as, one designed for the PT team. The team provided an in-service during a scheduled training day; followed by one on one briefs for those who did not attend. These briefings were held over two-weeks and captured about 90 percent of the staff. The next step was implementing the tool. The providers utilized the SBT from 28 September to 30 November 2020. They documented the tool’s use and the results in the electronic health record (AHLTA). The tool guided the providers' decision-making for the recommendation of a home exercise program supplemented with the Back Book or PT. It also recommended referral to BH if the patient scored in the high-risk category. PT staff members were requested to chart patient progress with recommended therapy.

A team member was present daily to monitor and validate the correct use of the SBT during the implementation period. The next step was completing the post-implementation chart review. This review was initiated 12 weeks after the initial acute LBP encounters to determine chronicity. In addition to the data collection areas discussed above in the retrospective review, the post-implementation review included frequency of tool use, SBT score, recommendations, and PT's disability rating.

Phase 3: Evaluate outcomes. The comparative analysis included the results of the retrospective and implementation chart reviews. Conclusions were made based on the mean values of the evaluated metrics. The percent of change from pre to post-implementation was used to highlight the SBT's impact on the population and recommend future implications. In effort to sustain change, the results of this project were presented and distributed to WAMC and RHC stakeholders. The training tools were updated considering identified barriers and areas of improvement. Recommendations for future use and implications of practice were disseminated at the 2021 WAMC Research Symposium and USU Research Days.

HIPAA Concerns/Ethical Considerations

As with any project that involves patients, the concern with HIPAA information was evident. In research, the regulatory framework for human subjects is known as the Common Rule. The Common Rule includes respect for persons, beneficence, and justice and is responsible for requiring study approval by the Institutional Review Board (IRB) (Nosowsky & Giorano, 2006). The project went under review and received an IRB Non-Research Determination letter with the outcome code 20-10629. Patients presenting with a complaint of acute LBP were targeted for this study. Medical records were gathered based on LBP ICD-10 codes by a population health nurse in hardcopy format. The patient's personal identifying information (PII)

was only used to access their medical record for necessary data points. All printed PII was secured behind two locks and properly destroyed at the conclusion of the project. No patient PII or identifying data was used in any data set, the narrative of the project, or in dissemination.

Project Results

After the retrospective chart review, 107 charts met inclusion criteria for analysis. The average demographic findings of our population were as follows: average age 28, 89 percent male, and 70 percent junior Non-Commissioned Officers. Twenty-nine percent of this population progressed to chronic LBP as evidenced by a follow-up visit for LBP at or greater than 12 weeks or an extended profile beyond 90 days. The most common pharmacological therapy was a nonsteroidal anti-inflammatory drug (NSAIDs) (44%). Central nervous system depressants (MSKRs) were prescribed to 23 percent of the patients. PT was recommended in 46 percent of the population. Of the patients who attended PT, 35 percent progressed to chronic LBP.

A total of 505 LBP encounters occurred during the implementation period; 211 were excluded since they were chronic or traumatic. The 294 remaining patient encounters were reviewed as initial acute LBP encounters. A comparison of retrospective to implementation data demonstrated a 41% reduction in chronic LBP overall. The SBT was utilized forty (n=40) times during the implementation period. The SBT classified 16 (40%) patients as low risk, 17 (42.5%) as medium risk, and 7 (17.5%) as high risk. The referral decisions were in agreement with the recommendations of the SBT the majority of the time. However, two high-risk patients were not referred to BH, one medium-risk patient was not referred to PT, and one low-risk patient was referred to PT. Overall, only 15 percent of individuals who were screened with the SBT progressed to chronic. There was a 48 percent decrease in chronicity with the use of the SBT from the rate of chronicity a year before the implementation phase. As expected the individuals

who scored high on the screening tool had the highest rate of chronicity when compared to the low and medium-risk groups. In the remaining group that met criteria but were not screened with the tool (non-SBT group), 17 percent progressed from acute to chronic LBP. The non-SBT group was referred to PT 55 percent of the time, while the SBT group was referred 60 percent of the time. Of the patients who attended PT, 27 percent progressed to chronic LBP. RHC's PT team used the ODI and FABQ screening questionnaires to support their treatment recommendations. We found that within the SBT group, 62 and 58 percent of patients had improved ODI and FABQ scores respectively. The mean age of patients seen during the implementation period was 27 years (range 18 to 46), and males made up the majority of the sample population (89%). The providers who used the SBT prescribed MSKRs to 35 percent of patients, while those who did not use the tool prescribed to 42 percent of patients. This shows the SBT decreased MSKR use by 18 percent. The data does show, however, that MSKRs were more likely to be prescribed to low risk (43%) and medium risk (35%) than high-risk patients (14%). The SBT recommended all high-risk patients be referred to a BHC for a pain evaluation. There were seven high-risk patients screened with the SBT, five of the seven were referred, but only four kept their scheduled appointment. They received the initial evaluation and counseling and two patients continued to the follow-on group sessions. It was noted that only 29 percent of the seven high-risk patients progressed to chronic LBP.

Analysis of Results

A majority of patients were classified in the low and medium risk groups in our study; whereas a majority of patients in studies of civilian populations were classified in the medium and high-risk groups (Hill et al., 2011). The most obvious variance to relate this difference is the mean age of the population in civilian studies, 45, as compared to the mean age of our

population, 28. Aging results in gradual loss of skeletal muscle function, muscle mass, and decreased muscle activity (Endo, Nourmahand, & Sinha, 2020). We also hypothesized the military population was more likely to score in lower risk categories due to their required tasks and functions when compared to the average civilian population. The fast-paced and high-intensity nature of military operations requires personnel to maintain physical and psychological resilience. Soldier resilience is typically shaped by daily physical exercise and training. Exercise decreases MSK pain sensitivity and increases aerobic capacity with significant future improvements in MSK recovery (Ote Karaca, Demirsoy, & Gunendi, 2017). Physical fitness also improves psychological resilience, including mood, cognition, and pain thresholds (Nindl et al., 2018).

In our project, measurements were obtained three months from the primary acute LBP visit. In the literature, follow-up for assessment of patient-reported outcomes for LBP started as early as six weeks and ranged up to two years. According to Cole et al. (2013), substantial evidence of LBP-related disability is most frequently documented at three months, and the most accurate assessment is noted at six months. We expected to see proportionate results of disability scores with our condensed three-month implementation phase. However, the results of our project exceeded the mean difference of disability scoring when compared to the literature. In most studies, the SBT confirmed a mean improvement of 30 percent in scores on the Roland-Morris Disability Questionnaire (RMDQ) and a 50 percent decrease of mean time off work (Foster et al., 2014). In one study by Robinson and Dagfinrud (2017), there was a 16 percent mean improvement in pain and function abilities with the use of the SBT as demonstrated by the Hannover questionnaire. The results of our project were based on the ODI and FABQ tools and were improved by at least two times when compared to these studies. Furthermore, we noted

seven screening tools assess MSK pain, most often back pain, and are aimed at predicting maintenance of pain or pain-related disability (Veirman et al., 2019). There is a possibility that the scores of our project were exceedingly higher compared to the literature due to the variance of tools used to measure disability. There also remains the hypothesis that Soldier resilience influences these results, as Soldiers are more likely to recover from MSK injury quicker than the civilian population.

The team also evaluated how the SBT affected the frequency or class of medications prescribed for LBP. We noted NSAIDs were the most frequently prescribed medication and there was no significant difference in administration when compared to the retrospective analysis. The VA/DoD CPG for diagnosis and treatment of low back pain (2017) recommends these medications along with acetaminophen be the first-line choice for non-specific LBP. Current literature suggests that NSAIDs be used in shorter time periods to prevent gastrointestinal ulcers, bleeding, interference with platelet aggregation, and to decrease the risk of cardiovascular events (Lemmon & Roseen, 2017). This practice was evident in our review as new NSAID prescriptions were limited to a 30 day supply without refills. Musculoskeletal relaxants (MSKR), antidepressants, and opioids are effective treatments for LBP but are considered second-line pharmaceuticals (Lemmon & Roseen, 2017). Our project found a decrease in MSKR prescriptions with the use of the SBT. These findings were significant since there is some controversy as to the efficacy of MSKRs for nonspecific back pain due to the adverse effects they impose on patients. Specifically, MSKRs cause central nervous system depression and have a strong association with sedation, blurred vision, headaches, and dependency (Witenko et al., 2014). These medications have a greater risk of adverse events for Soldiers both on and off duty, especially when operating heavy machinery or times when astute attention is required. Therefore,

decreasing the routine prescription of these medications was a valuable finding in our project, as reducing the adverse effects of these medications will lead to increased Soldier readiness.

Psychological risk factors should routinely be assessed and influence practice. Pain is disabling, difficult to treat, and is associated with behavioral factors that contribute to long-term disability (Veirman et al., 2019). Through the use of the SBT, we were able to distinguish high-risk patients that would not have otherwise been identified. Early risk factor screening for patients with LBP is a recommended strategy in identifying patients who are at risk for poor clinical outcomes (Beneciuk et al., 2013). Through the use of the SBT, we were able to advance management through timely delivery of cognitive-behavioral interventions and prevent persistent disability in over half of the high-risk population. The SBT fostered an interdisciplinary approach by capitalizing on the specific LBP cognitive behavioral therapy offered by RHC's BH counselor. The clinic's BH counselor also expressed her appreciation for this project as she was able to utilize specialized training obtained about a year ago and combat long-term disability in this high-risk population.

Chronic LBP is common, with an average prevalence of 20 percent in the general adult population (Lemmon & Roseen, 2017). The results from our retrospective analysis were slightly above this average and decreased by nearly half post-implementation of the SBT. The retrospective chart review period was chosen to align with the common timeframe of the semi-annual Army Physical Fitness Test/ Army Combat Fitness Test. It is not uncommon for Soldiers to seek medical care prior to this test to be placed on profile to avoid taking the test. Therefore, performing a retrospective chart review just prior to implementation in August could have artificially skewed the results, and is why the period of September 2019 to October 2019 was chosen for retrospective analysis. The world was hit with a global pandemic in 2020 which

changed many of the ways the Army performed training that year. It is possible that the significant difference seen between the retrospective chart review and SBT group could have been impacted by a decrease in overall Army physical and task training. This is why it is important to note that there was still a decrease in progression to chronic LBP between the SBT group over the non-SBT group during the intervention period.

The results of this project imply the SBT is a reliable tool in decreasing chronic LBP. In one study by Robinson and Dagfinrud (2017), 67 percent of SBT participants in primary care physiotherapy had LBP in one year. The short interval of assessments in our project may have increased the likelihood that the patient's condition was stable. However, it is also possible the SBT was used on LBP patients in different phases of their condition in the Robinson and Dagfinrud (2017) study. There is no information regarding the patient's condition, like the initial visit, in that study to determine if the populations are comparable. Additionally, this study utilized subjective reporting of LBP to determine chronicity. Our project determined chronicity based on the patient's ability to complete occupational duties, via profile status, or a return visit to primary care for further management beyond 12 weeks from the initial onset. There is evidence that suggests that expectations for LBP treatment success be focused on functional improvement and not solely on pain level reporting (Eklund et al., 2019).

Limitations

This project was hindered by some limitations. The number of participants was relatively low compared to the number of opportunities that presented during the implementation period. The team predicted to have at least 100 uses of the tool to evaluate, but the project resulted in 40 appropriate uses. Therefore, the statistical power of the results is limited by the number of encounters used for this project. The study by Robinson and Dagfinrud (2017) had a similar

population size, 52, and determined the SBT as a reliable and useful tool in primary care physiotherapy. The global COVID-19 pandemic also changed much of the way primary and specialty care was executed which could have limited the number of appointments and follow up visits for patients. PT treatment was not standardized nor was it executed in accordance with the SBT risk category recommendations. Additionally, compliance to PT sessions and home exercise programs were typically poor. This was a foreseen barrier. However, collaboration with the PT department Officer in Charge confirmed the individualized approach to treatment was based on patients' outcomes determined by their ODI and FABQ scores, reported ability to complete occupational duties, and demonstration of prescribed exercises. According to Foster et al. (2014), the SBT has better outcomes for patients and decreases the number of follow-up appointments required to treat LBP if provided therapy based on the risk category. Another barrier was the possibility that some patients, who did progress to chronic LBP, chose not to follow-up or failed to complete recommended therapies. This may skew our data since we are not able to adequately track if their acute back pain persisted over the three-month assessment period. Lastly, translation of this evidence-based tool from a civilian to military population was a limitation. This screening tool has not been validated in a military population. Nonetheless, the nine screening questions assess the physiological and psychosocial impact of back pain that should not produce distinct differences between the military and civilian populations. The questions are not related to occupation, physical demands, profile status, or disability. Furthermore, this trial along with the trial currently underway at Brooke Army Medical Center in San Antonio, Texas will assist in determining the validity of using the SBT in the Military Health System.

Organizational Impact/ Implications to Practice and Policy

Low back pain and other non-combat related MSK injuries are the greatest medical threat to Army readiness (Molloy, Pendergrass, Chervak, Hauret, & Rhon, 2020). It is associated with direct health care costs to the organization and indirect costs from lost productivity (Traeger et al., 2017). The SBT had broad implications across organizational levels. It decreased the number of soldiers on extended profiles which improved individual and unit medical readiness. At any one time, four percent of active-duty soldiers are non-deployable due to an MSK injury (Molloy, Pendergrass, Chervak, Hauret, & Rhon, 2020). The SBT has the potential to increase the number of soldiers medically ready to train and deploy.

The current LBP CPG recommends education and pharmacologic options, however, it does not provide guidance on when PT should be consulted (Fritz et al., 2021). Evidence shows that proper referrals from primary care to PT improves disability in patients with LBP. The SBT addresses this gap in the CPG. The SBT tool improved the utilization of PT services at RHC. According to feedback from the RHC physical therapists, they received a higher amount of appropriate referrals during the SBT's implementation. Reducing the amount of unnecessary PT referrals frees providers to direct their efforts to higher risk patients. The SBT has the potential to enhance the utilization of PT and access to care in any military health facility.

Improving access to care is important to the Army and overseer of military medical treatment facilities, the Defense Health Agency, as timely access to care is one of the essential features of a high-quality health care system (Price, Done, & Pizer, 2020). Timely access to care is equally important to patients. Price et al. (2020) conducted a study that demonstrated patients assigned to VA facilities with a high volume of follow-up visits were more likely to report difficulty scheduling timely appointments. Deployment of the SBT comes with new implications

to practice and policy. Standardized education, SBT and scoring references, and educational adjuncts will need to be distributed throughout the MHS. The ultimate success of the SBT relies on the consistency of interdisciplinary teams. Key leaders should reinforce this practice. There are some MTF's that conduct PT sick-call; this allows service members to go directly to a PT provider for an MSK concern. In order to capture these patients, the SBT should be incorporated into PT screening methods. This ensures that all acute LBP patients are appropriately screened and provided the proper recommendations.

Future Directions for Research and Practice

Though the SBT has numerous high-quality research trials in countries around the world, there are no research studies that include military populations. The unique athleticism, recurrent levels of high-impact physical duties, and operational tempo of active duty service members provide a unique patient demographic, different from those traditionally studied in previous SBT trials. For this reason, implementing the SBT at other MTFs would provide the generalizability for results experienced with Fort Bragg's 82nd Airborne Infantry Division soldiers. Employment of the SBT in MTFs that service basic training recruits, advanced individual training soldiers, and divisions without airborne operations will create a broader service member base to explore its impact. If results are consistent, this would support VA/DoD CPG level changes to LBP management in the military.

The Soldier Centered Medical Home (SCMH) employed at RHC provides the perfect platform to fully employ standardized organizational strategies for SBT use in all primary care clinics. The interdisciplinary approach to acute LBP between PCPs, PTs, and embedded BHCs was pivotal in achieving impactful results in this DNP project. Development and utilization of a standardized staff orientation for the entire SCMH to increase SBT use for all acute non-

traumatic LBP patients is a future direction. Another aim is to prevent barriers that limit provider acceptance of the SBT. We recommend the inclusion of staff to determine the best utilization method, standardized education, and documentation for improved clinical practice adaptation. Additionally, SBT committees should be formed to review results experienced at various locations, share lessons learned, and develop a step-wise approach to systematically roll out SBT execution. Finally, research involving patient satisfaction is needed to identify additional outcomes like quality of life, pain perception, and other subjective improvements experienced.

Conclusion

The military population is at high risk for frequent acute LBP episodes throughout their career. Therefore, there is a need to encourage a graded return to duty following each episode of acute LBP to prevent chronic disability. Primary care management of acute LBP is an important factor in decreasing the progression to chronic LBP. Integrative approaches are frequently underutilized in the conservative approach to LBP treatment. It is critical providers utilize a risk stratification screening tool and interventions that recognize the physical and psychological components linked with the risk of chronicity. The SBT is a brief evidence-based tool that guides management and offers conventional and complementary therapies for acute LBP patients. Furthermore, the recommendations of the SBT are safe, consistent with current guidelines, and cost-effective. The findings in this project indicate that the SBT is a useful risk identification and prognostic tool to guide acute LBP treatment in a primary care setting and is effective in reducing chronic LBP in a military population.

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Appendix A

CITI Certificates


CITI PROGRAM

Completion Date 28-Aug-2018
Expiration Date 27-Aug-2021
Record ID 28346459

This is to certify that:

Tonesha Sorrell

Has completed the following CITI Program course:

Not valid for renewal of certification through CME.

Responsible Conduct of Research (RCR)
(Curriculum Group)
Responsible Conduct of Research (RCR)
(Course Learner Group)
1 - Basic Course
(Stage)

Under requirements set by:

Office of the Under Secretary of Defense (Personnel and Readiness)

CITI
Collaborative Institutional Training Initiative

Verify at www.citiprogram.org/verify/?w0855c709-d234-43ed-84ab-c6f883017533-28346459


CITI PROGRAM

Completion Date 28-Aug-2018
Expiration Date 27-Aug-2021
Record ID 28346457

This is to certify that:

Tonesha Sorrell

Has completed the following CITI Program course:

Not valid for renewal of certification through CME.

OUSD P&R Human Research
(Curriculum Group)
Biomedical Investigators and Research Study Team
(Course Learner Group)
1 - Basic Course
(Stage)

Under requirements set by:

Office of the Under Secretary of Defense (Personnel and Readiness)

CITI
Collaborative Institutional Training Initiative

Verify at www.citiprogram.org/verify/?w8fb5b2af-b095-4bfd-9679-decb64fe1758-28346457


CITI PROGRAM

Completion Date 30-Mar-2021
Expiration Date 29-Mar-2024
Record ID 38942136

This is to certify that:

Tonesha Sorrell

Has completed the following CITI Program course:

Not valid for renewal of certification through CME.

Good Clinical Practice (U.S. FDA Focus)
(Curriculum Group)
GCP for Clinical Trials with Investigational Drugs and Medical Devices (U.S. FDA Focus)
(Course Learner Group)
1 - GCP
(Stage)

Under requirements set by:

Office of the Under Secretary of Defense (Personnel and Readiness)

CITI
Collaborative Institutional Training Initiative


CITI PROGRAM

Completion Date 27-Aug-2018
Expiration Date 26-Aug-2021
Record ID 28333195

This is to certify that:

Crystal Kelley

Has completed the following CITI Program course:

Not valid for renewal of certification through CME.

Responsible Conduct of Research (RCR)
(Curriculum Group)
Responsible Conduct of Research (RCR)
(Course Learner Group)
1 - Basic Course
(Stage)

Under requirements set by:

Office of the Under Secretary of Defense (Personnel and Readiness)

CITI
Collaborative Institutional Training Initiative

Verify at www.citiprogram.org/verify/?w29f1ad84-4edd-49a0-9423-f7e7c57e48a9-28333195


CITI PROGRAM

Completion Date 27-Aug-2018
Expiration Date 26-Aug-2021
Record ID 28333193

This is to certify that:

Crystal Kelley

Has completed the following CITI Program course:

Not valid for renewal of certification through CME.

OUSD P&R Human Research
(Curriculum Group)
Biomedical Investigators and Research Study Team
(Course Learner Group)
1 - Basic Course
(Stage)

Under requirements set by:

Office of the Under Secretary of Defense (Personnel and Readiness)

CITI
Collaborative Institutional Training Initiative

Verify at www.citiprogram.org/verify/?w4e0c4836-7b41-4994-836f-dde98513f095-28333193


CITI PROGRAM

Completion Date 27-Aug-2018
Expiration Date 26-Aug-2021
Record ID 28333194

This is to certify that:

Crystal Kelley

Has completed the following CITI Program course:

Not valid for renewal of certification through CME.

Good Clinical Practice (U.S. FDA Focus)
(Curriculum Group)
GCP for Clinical Trials with Investigational Drugs and Medical Devices (U.S. FDA Focus)
(Course Learner Group)
1 - GCP
(Stage)

Under requirements set by:

Office of the Under Secretary of Defense (Personnel and Readiness)

CITI
Collaborative Institutional Training Initiative

Verify at www.citiprogram.org/verify/?wb676f68e-d14e-4351-a681-d71f070748b9-28333194

CITI PROGRAM

Completion Date 27-Aug-2018
Expiration Date 26-Aug-2021
Record ID 28333192

This is to certify that:

LaChish Latimer

Has completed the following CITI Program course:

Not valid for renewal of certification through CME.

Responsible Conduct of Research (RCR)
(Curriculum Group)
Responsible Conduct of Research (RCR)
(Course Learner Group)
1 - Basic Course
(Stage)

Under requirements set by:

Office of the Under Secretary of Defense (Personnel and Readiness)

CITI
Collaborative Institutional Training Initiative

Verify at www.citiprogram.org/verify/?w1dafe460-ac77-4431-b075-7c0573c59e2e-28333192

CITI PROGRAM

Completion Date 27-Aug-2018
Expiration Date 26-Aug-2021
Record ID 28333190

This is to certify that:

LaChish Latimer

Has completed the following CITI Program course:

Not valid for renewal of certification through CME.

OUSD P&R Human Research
(Curriculum Group)
Biomedical Investigators and Research Study Team
(Course Learner Group)
1 - Basic Course
(Stage)

Under requirements set by:

Office of the Under Secretary of Defense (Personnel and Readiness)

CITI
Collaborative Institutional Training Initiative

Verify at www.citiprogram.org/verify/?w4f16af24-b650-4c68-999d-d52528b966a2-28333190

CITI PROGRAM

Completion Date 27-Aug-2018
Expiration Date 26-Aug-2021
Record ID 28333191

This is to certify that:

LaChish Latimer

Has completed the following CITI Program course:

Not valid for renewal of certification through CME.

Good Clinical Practice (U.S. FDA Focus)
(Curriculum Group)
GCP for Clinical Trials with Investigational Drugs and Medical Devices (U.S. FDA Focus)
(Course Learner Group)
1 - GCP
(Stage)

Under requirements set by:

Office of the Under Secretary of Defense (Personnel and Readiness)

CITI
Collaborative Institutional Training Initiative

Verify at www.citiprogram.org/verify/?w3423523c-0397-49d7-944f-e8d1d6ce455e-28333191

CITI PROGRAM

Completion Date 27-Aug-2018
Expiration Date 26-Aug-2021
Record ID 28242005

This is to certify that:

Ameera Brooks

Has completed the following CITI Program course:

Responsible Conduct of Research (RCR) (Curriculum Group)
Responsible Conduct of Research (RCR) (Course Learner Group)
1 - Basic Course (Stage)

Under requirements set by:

Office of the Under Secretary of Defense (Personnel and Readiness)

CITI
Collaborative Institutional Training Initiative

Verify at www.citiprogram.org/verify/?w1f435651-ab6c-4dc7-bbc6-d45642d6a30f-28242005

CITI PROGRAM

Completion Date 26-Aug-2018
Expiration Date 25-Aug-2021
Record ID 28242003

This is to certify that:

Ameera Brooks

Has completed the following CITI Program course:

OUSD P&R Human Research (Curriculum Group)
Biomedical Investigators and Research Study Team (Course Learner Group)
1 - Biomedical Investigators (Stage)

Under requirements set by:

Office of the Under Secretary of Defense (Personnel and Readiness)

CITI
Collaborative Institutional Training Initiative

Verify at www.citiprogram.org/verify/?w95c0b5c5-872e-4c74-b314-9683283a0868-28242003

CITI PROGRAM

Completion Date 27-Aug-2018
Expiration Date 26-Aug-2021
Record ID 28242004

This is to certify that:

Ameera Brooks

Has completed the following CITI Program course:

Good Clinical Practice (U.S. FDA Focus) (Curriculum Group)
GCP for Clinical Trials with Investigational Drugs and Medical Devices (U.S. FDA Focus) (Course Learner Group)
1 - GCP (Stage)

Under requirements set by:

Office of the Under Secretary of Defense (Personnel and Readiness)

CITI
Collaborative Institutional Training Initiative

Verify at www.citiprogram.org/verify/?w8313f7ef-882c-4a06-b1d8-727a21906a59-28242004

Appendix B

USU (VPR) Form 3202N

USU
Uniformed Services University

OFFICE OF RESEARCH
4301 JONES BRIDGE ROAD
BETHESDA, MAYLAND 20814
PHONE: (301) 295-3303; FAX: (301) 295-6771

NOTICE OF PROJECT APPROVAL
Change Number: Original

VPR Site Number:	GSN-61-11246
Principal Investigator:	Sorrell, Tonesha
Department:	Graduate School of Nursing
Project Type:	Student
Project Title:	PICKUP for the prevention of chronic back pain in military service members
Project Period:	4/29/2020 to 5/1/2021

Assurance and Progress Report Information:

Name	Sup	Approval Type	Status	Approved On	Forms Received
Progress Report	0			To be Submitted	N/A

Remarks:
This Notice Of Project Approval has been reviewed and approved. Please remember that you must submit a final Progress Report (Form 3210) upon completion of this project.

Questions regarding this approval should be directed to the following person in the Office of Research:
Sharon McIver, (301) 295-9814.

[redacted]

Toya V. Randolph, Ph.D., MSPH Date
Acting Vice President for Research
Uniformed Services University of the Health Sciences

cc: File
Radford, Kennett
Taylor, Laura

Appendix C

MTF IRB/PI Letter of Determination

DEPARTMENT OF THE ARMY
WOMACK ARMY MEDICAL CENTER
2817 REILLY ROAD
FORT BRAGG, NORTH CAROLINA 28310-7324

MCXC-DQS August 13, 2020

MEMORANDUM FOR LTC Louis Michael Magyar, DNP LTC, AN P and R - Uniformed Services University of the Health Sciences (USUHS), P and R

SUBJECT: Determination for Project "Use of the STarT Back tool to prevent the progression to chronic low back pain in active duty Soldiers," 20-10629

1. The subject protocol was reviewed by the Womack Army Medical Center (WAMC) Human Research Protections Program (HRPP) Office for applicability of human subject protections regulations.

2. The objective of this project is to evaluate the effectiveness of the STart Back risk stratification tool for low back pain in guiding the treatment of active duty soldiers with back injury presenting at Robinson Health Clinic, Fort Bragg, NC. Use of the tool will be compared to current practice in management of back pain in patients. Treatment pathways and outcomes will be compared for progression of acute low back pain to chronic low back pain in this population.

3. The undersigned has determined the protocol does not meet the definition of research as defined by 32 CFR 219.102(l): a systematic investigation, including research development, testing and evaluation, designed to develop or contribute to generalizable knowledge. This project has been determined to be an Evidence Based Practice project focusing on a procedural change in implementing a validated risk stratification tool to determine if this will improve patient outcomes at a military health clinic. This project has been reviewed by the Evidence Based Practice Council at Womack Army Medical Center and has been approved to proceed as an evidence based practice activity.

4. The project may proceed as described with no further requirement for regulatory review and cannot be presented as research in any resulting presentation or publication. All publications, presentations or abstracts arising from this work must be cleared through appropriate publication clearance procedures.

5. This project may be subject to approval from other departments at WAMC or outside agencies, but there is no further requirement for review by the WAMC HRPP Office.

6. In the event there is a change to the research that may affect this determination, please submit a modification form in EIRB (https://eirb.csd.disa.mil). The WAMC HRPP Office will re-evaluate the project if necessary.

MCXC-DME-RES
SUBJECT: Determination of Not Research for, Project "Use of the STarT Back tool to prevent the progression to chronic low back pain in active duty Soldiers," 20-10629

7. Point of contact for this action is the undersigned at 910-907-7323.

JENNIFER S. KUNTZ, MLS,
Human Research Protection Program

Appendix D

PAO Clearance

DEPARTMENT OF THE ARMY
WOMACK ARMY MEDICAL CENTER
2817 REILLY ROAD
FORT BRAGG NC 28310-7301

MCXC-ME-RCI 26 March 2021

MEMORANDUM FOR Louis Magyar

SUBJECT: WAMCPC0798 STarT Back Tool Decreases Chronic Low Back Pain in Military Services Members

1. Your publication has been reviewed by all appropriate personnel and approved by the Department of Research for public presentation/submission.

2. This approval allows you to present the approved publication at other venues so long as only minor changes have occurred.

3. Thank you for your submission, and we look forward to seeing your scholarly activity in the near future. Please include the title of your publication and reference number in all correspondence.

4. The POC for this memorandum is Christy Crawford at [redacted] or [redacted]

Christy Crawford
Research/Clinical Investigation
Womack Army Medical Center

Appendix E

STarT Back Tool and Scoring System

The Keele STarT Back Screening Tool

Patient name: _____ Date: _____

Thinking about the **last 2 weeks** tick your response to the following questions:

		Disagree 0	Agree 1
1	My back pain has **spread down my leg(s)** at some time in the last 2 weeks	☐	☐
2	I have had pain in the **shoulder** or **neck** at some time in the last 2 weeks	☐	☐
3	I have only **walked short distances** because of my back pain	☐	☐
4	In the last 2 weeks, I have **dressed more slowly** than usual because of back pain	☐	☐
5	It's not really safe for a person with a condition like mine to be physically active	☐	☐
6	**Worrying thoughts** have been going through my mind a lot of the time	☐	☐
7	I feel that **my back pain is terrible** and **it's never going to get any better**	☐	☐
8	In general I have **not enjoyed** all the things I used to enjoy	☐	☐

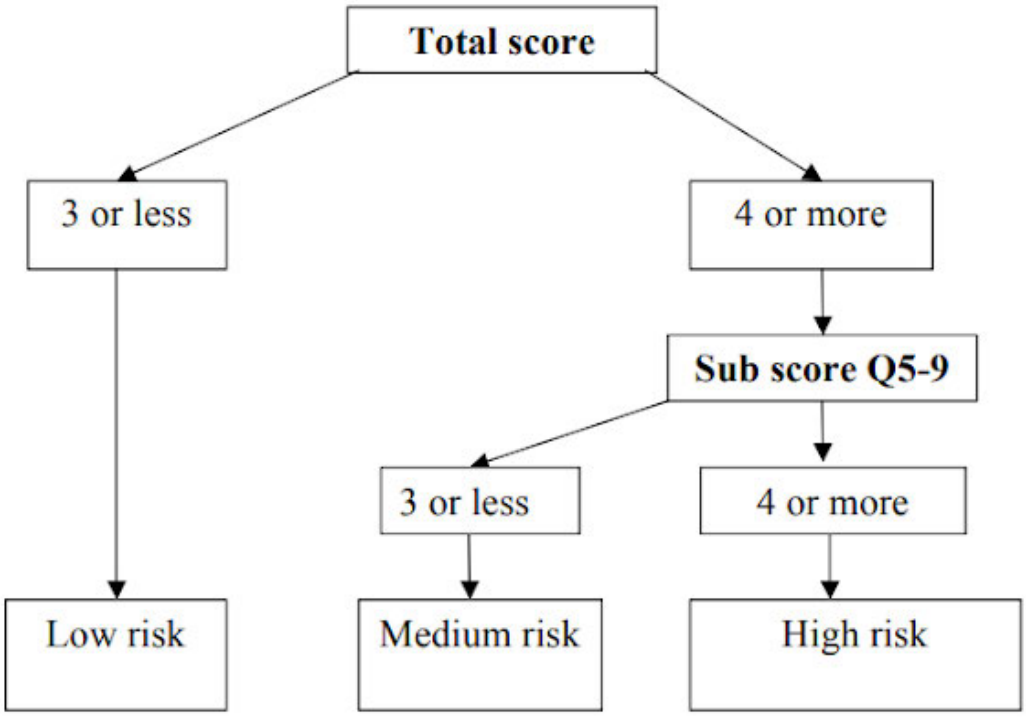
9. Overall, how **bothersome** has your back pain been in the **last 2 weeks**?

Not at all	Slightly	Moderately	Very much	Extremely
☐ 0	☐ 0	☐ 0	☐ 1	☐ 1

Total score (all 9): _____ **Sub Score (Q5-9):**_____

Funded by Arthritis Research UK

The STarT Back Tool Scoring System



Funded by Arthritis Research UK

Appendix F

Senior Mentor Approved Abstract/Impact Statement Form

Appendix F: Daniel K. Inouye Graduate School of Nursing
DNP Project Senior Mentor Approved Abstract/Impact Statement Form

DOCTOR OF NURSING PRACTICE PROJECT
Senior Mentor Approved Abstract/Impact Statement Form

PROPOSAL ABSTRACT/IMPACT STATEMENT

PROPOSAL ABSTRACT
Phase II Site: Fort Bragg, North Carolina
Project Title: PICKUP for the Prevention of Chronic Low Back Pain in Military Service Members
Authors: Ameera Brooks, Crystal Kelley, LaChish Latimer, & Tonesha Sorrell

Background/Problem: Low back pain (LBP) is a high burden condition and accounts for millions of outpatient visits. LBP affects military readiness, is costly to the Military Health System (MHS) and is a common reason for long-term military member disability and compensation. The current approach in management of acute LBP is ineffective in the secondary prevention of chronic LBP.

Clinical Question: For active duty patients from 18-50 years old with acute LBP does utilizing a risk stratification and prevention index tool in addition to current practice prevent the development of chronic LBP?

Project Design: The team will use the existing electronic medical record to perform a retrospective review of active duty patients enrolled in the Robinson Health Care (RHC) clinic that presented with acute LBP within the last year. This review will include prevalence of acute LBP encounters, assessment of the current practices in the management of acute LBP, and the development of chronic LBP in these patients. A standardized educational brief and handout on the use of the PICKUP tool will be delivered to health care providers at this clinic to guide management in patients with acute LBP. After three months a chart review of LBP study participants will be conducted, and the data will be compared.

Plan for Data Analysis: The team predicts results will demonstrate improvement in identification of high-risk patients with acute LBP, increase utilization of therapies for acute LBP, and decrease the incidence of chronic LBP. The results of these measures both before and after tool implementation will be presented to the RHC clinic staff, local leadership at Womack Army Medical Center, and the leaders of the Uniformed Service University.

Proposed Organizational Impact/Implications for Practice: Implementing the PICKUP tool and it's four-flag category approach will improve utilization of the therapies recommended in the VA/DoD LBP CPG, thus promoting early and accurate treatment. This will decrease the prevalence of chronic LBP in military members and therefore increase readiness and save millions for the MHS and Veterans Affairs.

ABBREVIATED VERSION
Project Purpose: Early and accurate treatment of acute low back pain in military service members to prevent the development of chronic low back pain.
Impact: The use of the PICKUP tool will decrease the prevalence of chronic LBP in military service members and therefore increase readiness and save millions for the Military Health System and Veterans Affairs.

APPROVED:
Danette Cruthirds [redacted] 15Apr2020

Appendix G

DNP Project Completion Verification Form

Appendix G: Daniel K. Inouye Graduate School of Nursing DNP Project Completion Verification Form

DOCTOR OF NURSING PRACTICE PROJECT
Completion Verification Form

The DNP Project titled: STarT Back Tool Decreases Chronic Low Back Pain in Military Service Members was completed at Robinson Health Clinic, Womack Army Medical Center, Fort Bragg, North Carolina by the following student(s):

__Ameera Brooks_____	[redacted]	___15 May 2021___
__LaChish Latimer_____	[redacted]	___15 May 2021___
__Crystal A. Kelley _____	[redacted]	___15 May 2021___
__Tonesha S. Sorrell ____	[redacted]	___15 May 2021___

The DNP Practice Project Team verifies that the following components of the DNP project, accomplished by the above students, is of sufficient rigor and demonstrates doctoral level scholarship to meet the requirements for USUHS GSN graduation:

- Presentation of DNP project to the leadership/stakeholders at the Phase II Site,
- Abstract/Impact Statement (*Appendix F*), and
- DNP Project written report.

Verified by:

_Dr. Danette Cruthirds__	[redacted]	_15 MAY 21 Senior Mentor
_LTC Louis Magyar____	[redacted]	_15 MAY 21 Phase II Site Director

Form Version: 26 Aug 2017