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Quality Improvement Project to Enhance Provider Awareness and Use of the Coping Strategies Questionnaire (CSQ) to Assess Patients' Level of Coping with Chronic Pain

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Quality Improvement Project to Enhance Provider Awareness and Use of the Coping Strategies Questionnaire (CSQ) to Assess Patients’ Level of Coping with Chronic Pain

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Abstract

Chronic pain is a public health problem that has an effect on 20-30% (100 million) of the population of Western countries, with costs to manage chronic pain ranging from $560 to $635 billion annually. Many chronic body system problems, especially those involving musculoskeletal and neurological sequelae, aggravate the pain sensation over time. Chronic pain is depicted by physical dysfunction, disability, and mood alteration; exacerbated by a lack of appropriate coping strategies. Treatment for patients with chronic pain, by providers, has been proven to be inadequate, secondary to providers’ reports of lack of time and lack of a consistent, efficient, effective protocol, and tool for assessment of patients’ chronic pain and coping. Therefore, it was necessary to investigate a method for providers to assess and intervene with patients to foster improved health outcomes and aid them in coping with chronic pain. The Coping Strategies Questionnaire (CSQ) was developed, refined, and decreased from the original 50-item questionnaire to a more ‘user-friendly’ 14-item version. The shorter CSQ has been proven to be a valid and reliable tool in assessing coping strategies for patients with chronic pain. Consistent results in identifying patients who have low to poor coping strategies have been produced when using the refined 14-item CSQ. The goals and objectives of this quality improvement project were to pilot the use of the CSQ to assess patients with chronic pain within a targeted primary care practice and to offer providers a sustainable use tool that identifies patients’ positive and negative coping mechanisms. With the CSQ data in hand providers were able to intervene when patients demonstrated ineffective coping. This paper describes the results and success of the intervention including providers’ comments and commitment to sustainable use of the CSQ.

Keywords: Chronic pain, Coping Strategies Questionnaire, coping, coping tool, chronic pain self-management, positive coping strategies.
Introduction and Background

Chronic pain is challenging to treat with standard medical treatments alone and patients are urged to use positive coping strategies to help manage pain (Higgins, Bailey, LaChappelle, Harman & Hadjistavropoulos, 2015). Chronic pain is a public health problem that has an effect on 20-30% (100 million) of the population of Western countries (Dansie & Turk, 2013; Gaskin & Richard, 2012). The costs to manage chronic pain range from $560 to $635 billion annually and exceed the costs of cardiovascular, gastrointestinal, respiratory, and endocrine system diseases; neoplasms; injury and poisoning; and nutritional and metabolic diseases (2012). Chumbler et al. (2013), propose two-thirds of primary care visits are in relation to musculoskeletal pain. Approximately 200 million lost work days per year are the result of back and joint pain.

Chronic pain is depicted by physical dysfunction, disability, and mood alterations (Monticone et al., 2014). Patients living with chronic pain often come to the conclusion it is a disease in itself, regardless of the cause for the pain. The intensity, quality, timing, and impression of the pain sensation is exclusively experienced by each person. Although, pain medications can reduce pain levels, allowing patients to function better, Chumbler and colleagues (2013), found that analgesics alone often fail to deliver satisfactory reprieve for many patients. A significant feature of managing chronic pain comprises tactics for augmenting coping strategies, reducing pain associated damage, and cultivating health related quality of life and ability to function.

According to Lansbury (2000), treatment of chronic pain is inadequate; with less than 40% of sufferers actually reaching acceptable long term pain relief from medications or surgery. The limited success of chronic pain treatment is believed to be due to providers ineffectively distinguishing the varying characteristics of chronic pain that reach beyond the physical pain
experience of patients. For example, patients’ negative experiences with health professionals will affect their desire for repeat or follow-up visits, regardless of the level of their pain and need for treatment. Due to this, patients’ readiness to recognize pain and report information truthfully, may be restricted (2000).

According to Johannes, Le, Zhou, Johnston, and Dworkin (2010), the prevalence of chronic pain rises with progressing age until of 64 years, leveling off thereafter. The incidence is higher for females in each age group. The incidence of chronic pain is higher in white, non-Hispanics than other ethnicities and show an escalated probability of suffering at the lowest income level in comparison to the highest income level (2010).

Goldberg and McGee (2011) estimate a diagnosis of chronic pain is rendered to about one in ten adults each year. Pain has numerous, critical sequelae to include depression, failure to work, disturbed social relationships and suicidal ideations. Raising public awareness about pain involves distinctly outlining pain as a disease state and indicating why it must be a priority. Many models of chronic pain postulate how a person copes is one of many important variables that describe the differences amid those who suffer from chronic pain (Ferria-Valente, Riberio, Jensen, & Almeida, 2011). Jensen et al. (2003), contend what a person believes about pain and the coping mechanisms used, influence adjustment and functioning. The overall condition of individuals could possibly be altered by utilizing coping strategies (Benyon et al., 2013).

Upshur, Luckmann, and Savageau (2006), avow providers and patients are equally frustrated with treatment practices and outcomes related to chronic pain management. Providers often report a lack of training, limited confidence in capabilities of providing effective treatment, as well as a decreased level of satisfaction with the care provided for patients with chronic pain. An emphasis on patient-centered methodologies is needed for chronic pain management.
Providers, who are faced with minimal time during exams and have not been formally educated on the Coping Strategies Questionnaire (CSQ) often times have fatalistic attitudes regarding implementation of the CSQ into a patient visit (2006). A standardized approach to educate patients with chronic pain, on self-management strategies is necessary.

**Problem Statement**

Risk of inadequate coping strategies in light of chronic pain among adult (>18 years of age) patients of a rural family practice clinic in New Mexico is evidenced by the high rate of patients diagnosed with chronic pain and a lack of screening to identify poor coping. Chronic pain is exacerbated by a deficiency in providers’ use of coping tools for patients. Providers report lack of training about these tools, insufficient time to use the tools, and lack of an effective protocol in practice. An evidence-based coping strategies appraisal tool to assess patients’ coping mechanisms is needed to foster a more robust set of patient-centered management strategies that could be initiated by the providers once the tool was used and scored.

**Review of Literature**

Relevant literature was reviewed for evidence addressing the significance of coping strategies addressed in conjunction with treatment of chronic pain. The following databases were used: Cumulative Index of Nursing and Allied Health Literature (CINHAL), and PubMed of the National Library of Medicine. The Medical Support Headings (MeSH) terms included coping, chronic pain, coping tool, Coping Strategies Questionnaire (CSQ), providers, education, coping tool packet, 2000-2015, including hand/manual searches in relevant literature like references. Retrieved from the above search were 51 articles. Inclusion criteria included any study referencing the CSQ and chronic pain while exclusion criteria was any study lacking research design, individual opinions, and duplicates of other studies. In total, eight research
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articles, 2010-2016, relating to the CSQ and chronic pain were analytically appraised based on the level of research evidence and graded according to quantity, quality, and consistency of the findings. Included were; a prospective observational cohort study, a randomized clinical trial, a cross cultural study, a cross sectional study, a longitudinal cohort study, a qualitative study, and a comprehensive systematic literature review.

Discussion

Robinson et al. (1997), defines coping as an internal and action-oriented attempt by individuals to deal with traumatic environmental and inner stressors taking a toll on their abilities to cope. The interest in coping with pain is derived from the idea dysfunction and disability are the result of chronic pain for some, while others seems to adjust very well to the stress of continuing pain (Robinson et al., 1997). According to Dansie and Turk (2013), the concept and impact of chronic pain, across sufferers is influenced by how pain is reflected on by each person with a diagnosis of chronic pain. Patients compared both physically and pathologically, have been observed to respond differently relative to severity and chronicity of their conditions (Harland & Georgieff, 2003) resulting in substantial research geared to assess cognitive and behavioral coping mechanisms exhibited across patients.

Benyon et al. (2013), affirm there is an association between coping strategies, pain and disability. Pain coping responses according to Ferreira-Valente, Ribeiro, Jensen, and Almeida (2011), can be categorized as adaptive and maladaptive. Treatments and treatment programs containing interventions intended to reduce maladaptive behaviors and augment adaptive actions have led to diminished pain, enhanced psychological Welfare and improved physical functioning (Tan et al., 2001).
Chumbler et al. (2013), claim that for individuals to be able to deal with chronic pain they must augment coping strategies to decrease pain associated impairment and cultivate health related quality of life and a functional state. Positive psychology designates that extraversion, positivity, and resilience enhances patients’ ability to cope with pain successfully (Ramirez-Maestre & Esteve, 2013). Pessimism has been proven to lead to avoidant and passive coping strategies involving daily life, leading to a decreased daily activity level and functional disability. Optimism, on the other hand, involves the use of active coping which precedes enhanced adjustment to chronic pain.

According to Higgins et al. (2015), patients with chronic pain undergo fluctuating levels of coping attainment, therefore, raising the likelihood certain psychological methods empower some to cope more effectively than others. The ability to cope with medical conditions may be biased by the sufferers’ perception of the illness and the emotional reaction to the apparent health threat. Relinquishing the power of the situation, a passive coping strategy, has been linked to increased pain and disability (Benyon et al., 2013).

Jensen et al. (2003), contend well-founded and consistent measures of pain related beliefs and coping strategies are necessary to test assumptions resulting from cognitive behavioral models regarding the links among beliefs, coping and adjustment to chronic pain. Jensen et al. also suggest providers use processes of pain related beliefs and coping to acquire protocols focusing on the most essential beliefs and coping strategies for a specific patient. Assessment and revision of coping strategies for chronic pain have become a focal point of psychological practices in dealing with pain management (Tan et al., 2001).
Quantitative and Qualitative Studies Discussion

Green, Wheeler, Marchant, LaPorte, and Guerrero (2001) piloted a multi-item mail survey to ascertain 368 physician’s perceived knowledge of pain management modalities, aims, satisfaction, and confidence with pain treatment. 30% reported to have had no formal education in pain management. The investigators also reported a dissention between the physician’s goal of pain management and the fulfillment of the pain relief perceived by patients with chronic pain. More recently, in a modified Delphi group process study conducted by Clark and Upshur (2007), physicians from six community practice sites, including 14 primary care physicians, agreed there is a need for informational resources to enhance care. A lack of educational interventions to help patients develop self-management skills was identified. All 14 participating providers recognized the need for a series of improvements for pain assessment and treatment planning protocols to benefit both providers and their patients coping with chronic pain. Clark and Upshur report improvements included: provider education and resources (referrals); patient self-management education; alternative interventions (group educational sessions, care management, massage, and access to exercise); system changes around opioid refills; and the use of a care manager to help with coordination of activities.

Ponte and Johnson-Tribino (2005) obtained similar results from a survey analysis of 537 members of the West Virginia Chapter of the American Academy of Family Physicians. A total of 185 surveys were returned, a respectable 35% response rate. One hundred eighty two respondents reported frustration when treating patients with chronic nonmalignant pain and 183 stated it was time consuming to manage this type of patient. One hundred eighty three physicians conveyed their medical training did not prepare them effectively to manage pain.
Tribino (2005) concluded that many providers feel inadequately trained to treat patients with chronic pain and are dissatisfied with caring for the population.

**Tool**

The CSQ was developed by Rosenstiel and Keefe (1983) to evaluate the occurrence of the use of cognitive and behavioral pain coping strategies of patients with chronic low back pain to include: diverting attention, reinterpreting pain sensations, ignoring pain, praying, hoping, coping self-statements, increasing behavioral activities, and catastrophizing. The items listed on the CSQ, according to Monticone et al. (2014) reflect coping strategies often reported by patients. The original CSQ is a 50-item self-report measure of eight pain coping strategies (1983). The occurrence of each pain coping response is rated on a 0-6 point Likert scale with choices ranging from zero signifying *no use* through six signifying *frequent use* of the coping strategy. This original CSQ is the most extensively used measure of coping strategies in chronic pain and has been used with patients who have a varied assortment of pain problems to include musculoskeletal pain, osteoarthritis, knee replacements, Rheumatoid Arthritis, fibromyalgia, and low back pain (Burckhardt & Henricksson, 2001; Stewart, Harvey, & Evans, 2001).

A current movement in clinical practice is implementation of short screening and diagnostic self-report instruments for patients suffering with chronic pain, (Benyon et al., 2013; Chumbler et al., 2013; Ferreira-Valente et al., 2011; Harland & Georgieff, 2003; Higgins et al., 2015; Jensen, Keefe, Lefebvre, Romano, & Turner, 2003; Monticone et al., 2014; Riddle & Jensen, 2013; Robinson et al., 1997; and Tan et al., 2001). The 50-item CSQ has been condensed into multiple short forms, to help improve decision making in clinical practice. Therefore, these investigators have conducted numerous studies using the revised, shorter CSQ to investigate if coping strategies of patients with chronic pain are associated with higher levels of pain and
disability. All investigators agreed poor coping strategies, such as catastrophizing and ignoring are related to greater levels of pain and disability.

For example, Benyon et al. (2013), implemented a revised version of the CSQ to assess four coping strategy domains: catastrophizing, ignoring pain sensations, increasing behaviors and using coping self-statements. The purpose of the prospective observational cohort study, in six general practices in the United Kingdom, was to investigate if coping strategies are correlated with higher levels of pain and disability among adults aged 50 and over with musculoskeletal pain over a six-month period. Participants were mailed a questionnaire to include the revised CSQ. Relations of baseline pain with baseline coping mechanisms were projected using ordinary least squares regression models. Generalizability was limited due to the tool being piloted where the ethnicity was commonly ‘White British’. This revised version uses only two items to assess each domain. Items are scored on a Likert scale of zero to six; zero signifying no use through six denoting regular use of each coping strategy. Final scores for each area are the mean score of the two items in the domain. Results of the study prove utilizing ignoring strategy in patients with elevated pain is a maladaptive coping strategy. The relationship between catastrophizing in predicting pain or disability could be referred by other aspects to include anxiety and depression. The researchers concluded, when anxiety and depression is accounted for, catastrophizing is not predictive of pain or disability at follow up. Further research is suggested to strengthen the findings.

A randomized clinical effectiveness trial, referred to as the Stepped Care to Optimize Pain care Effectiveness (SCOPE) study, conducted by Chumbler, et al. (2013), investigated to what degree a strong sense of coherence (SOC) is related to less pain and better health related quality of life amid patients with chronic pain. Sense of coherence is defined as a calculation of a
person’s ability to use an assortment of coping mechanisms when challenged with a stressor. The
investigators proposed a necessary feature to manage chronic pain, includes methods to develop
coping strategies, decrease pain related damage, and increase health related quality of life. In the
study, 250 patients with chronic pain were randomized. Sixty one percent of participants had a
strong SOC and 39% had a weak SOC. Approximately 82.8% were men and 76.8% were white.
A linear regression analysis revealed a strong SOC was significantly associated with better
general health, vitality, social functioning and pain self-efficacy, as well as less pain
catastrophizing. The six-item catastrophizing subscale of the CSQ was used to compute pain
catastrophizing perceptions and the degree members participated in catastrophizing, when
suffering from pain. The participants are comprised of United States Veterans receiving care
from a single Veterans Administration Medical Center; therefore the results may be less
generalizable in non-VA settings. Comparing this study to others, more women were included
with higher educational completion, employment rates and income. Selection bias is a limitation
because only participants willing to participate in a clinical trial were included. A second
limitation of the study is that the intervention concentrated on enhancing medications for the
treatment of pain. The results of the study are two-fold; a strong SOC is proven to be linked with
improved results and coping abilities are necessary to increase health related quality of life. SOC
was unchanged over a twelve month period signifying that SOC is a constant feature in the
study.

Riddle and Jensen (2013) found the 14- item CSQ has great relevance for chronic
arthritic knee pain patients. The study consisted of 873 patients with chronic knee osteoarthritis
pain. The participants were administered a two-item per scale version of the CSQ. In order to
choose an assortment of criterion-based measures for comparison to the CSQ, The International
Classification of Functioning framework was utilized. The Spearman rank correlations amid CSQ measures were all low to moderate. Construct validity is supported by the study, with the Catastrophizing and Praying or Hoping subscale variables justifying the strongest criterion validity with receiver operating characteristic (ROC) curve areas as high as 0.71 for recognizing participants with significant functional deficits. The sample size is larger than the average size for a study inspecting the cogency of pain coping measures, permits approximations with a high level of accuracy. The study has limited diversity in ethnicity with 21% being African American and only 1% Asian. Further studies of more racially and ethnically varied samples are vital. The Catastrophizing subscale variable exhibits the highest potential along with the Praying or Hoping subscale variable. Screening instruments along with other clinical data are suggested for future research. The CSQ, when used as a part of the assessment process, has potential to identify patients with chronic pain who are lacking in coping strategies to help them deal with their chronic pain (Riddle & Jensen, 2013). The 14-item CSQ is the specific item to be implemented for the Capstone project by the DNP candidate (see Appendix A).

Grimmer-Somers, Vipond, Kumar, and Hall (2009), conducted a literature review of assessment instruments for persistent pain to include 116 instruments and 45 were short listed. The CSQ long form (50 items), CSQ Revised (27 items) and an abbreviated 24 item form were all addressed. The forms were found to have strong internal consistency and reliability with assessment and intervention. The review recognized instruments applicable to primary health care settings; criteria for instruments were short, efficient to provide and score; and susceptible to persistent pain problems. The researchers found little conclusive verification to support the use of long versus short/revised tools, in terms of psychometric properties. The choice, according to the findings, would be centered on personal preference.
Inadequate treatment of pain can only be remedied with better assessment, diagnosis, and treatment strategies tailored to individuals with chronic pain, applied from a public health framework (Upshur, Luckmann, & Savageau, 2006). The global burden of the problem and comorbid conditions may be reduced by understanding pain as a disease, possibly decreasing the under assessment, treatment and misdiagnosis of pain (Lansbury, 2000). Conclusions of providers that could improve provider and patient experiences regarding chronic pain include an information packet for providers and enhancements in patient self-management instruction (Clark & Upshur, 2007). Education for providers regarding positive coping strategies and a screening tool for coping with chronic pain are necessary. Coping strategies may be predictive of pain intensity and pain related disability according to Lazarus and Folkman (1984); therefore, use of the CSQ during patient visits could open the door for a provider to address the positive and negative coping strategies used (if any) and introduce positive ways of coping with chronic pain.

Healthy coping strategies have been proven to improve health and wellness. Psychological techniques build resilience and teach the necessary skills for management of chronic pain (American Psychological Association, 2015). Pain is subjective and is what the person says it is. Using chronic pain management skills can help decrease dependence on pain medications and assist with pain control (Block, 2007).

**Theoretical Framework**

According to Issel (2014), a theory must comprise significant variables or aspects and must specify the direction of the interactions among the variables related to the health problem. The Transactional Model of Stress and Coping is a framework for evaluating the methods of coping with stressful events (Lazarus & Folkman, 1987). According to Lazarus’ Transactional...
Model of Stress and Coping, the notion of whether stimuli are stressful or not, hinges on how persons value the stressor (see Figure B1). The authors assert stress occurs as a result of an imbalance between demands and resources and stressful experiences interpreted through person-environment interactions and transactions. These experiences depend on the influence of the external stressor on the interaction or transaction and can be reconciled by the devaluation of the stressor if availability of social-cultural resources is adequate. Primary appraisal considers whether people have a stake in the stressor and individually people determine the importance of the event as stressful, helpful, manageable, inspiring, or irrelevant. When faced with a stressor, people directly gauge the effect of the threat, the primary appraisal. The stressor may have no significance, or may be desirable, or could cause harm or threat. If the stressor is important, a secondary appraisal is made to determine how to best deal with the situation and change adverse circumstances. Often, instead of trying to understand the situation, submission occurs and individuals are overcome by feelings of helplessness. When individuals take charge of a situation, evaluation of coping options occurs and they choose purposively to change the undesirable conditions.

Pain does not affect everyone equally and, for those that define their pain as a significant negative effect, it can lead to impairment of quality of life, physical disability, and emotional distress (Dansie & Turk, 2013). Coping with pain is extremely important. To reinstate balance, assessment of competence, social support, and other resources are necessary. Evaluation of internal and external coping options is necessary for people to manage the demands being experienced (Lazarus & Folkman, 1987). Internal options involve will power and inner strength. External options involve peers and professional health. With internal and external options intact, controlling the situation and coping with the source of the problem is possible. Strategies people
use to cope with stressors include: defining the problem, creating new solutions, learning new skills to manage the stressor, and finding new principles of behavior. Emotional based coping and trying to decrease the negative emotional state are some strategies. In the event the situation is out of control, avoidance is common, as well as, distancing from the situation, acceptance, seeking emotional support, dealing with pieces of the problem, or turning to alcohol or drugs.

Issel (2014), acknowledges interventions are actions done purposefully, to have an effect on people with the health problem being addressed. One such intervention is the CSQ. The CSQ would be considered tertiary prevention, involving assessment of level of personal use of activities to limit the magnitude of an existing disease, such as chronic pain.

Project Design/Methods/Implementation

The DNP project followed a Quality Improvement (QI) Model design. Methods included, a pre and post survey of providers and staff, focus group discussions with providers and staff, and use of the CSQ for patients (See Appendices C and D). Descriptive statistics were used to analyze the quantitative data from the CSQ tool and the patients’ demographic information. Qualitative data were analyzed from focus group discussions with the two providers and triage nurse over the course of the project.

Goals, Objectives & Data Analysis

The intent of the DNP project was to incorporate a time sensitive intervention into exam visits for patients with chronic pain, enabling the providers to address current coping strategies of their patients. The overall encompassing goal of the capstone project was to use an evidence-based tool to increase the skill level of providers in identifying patients who are not coping with their chronic pain well and who are in need of intervention in order to help them better deal with or manage their pain. The DNP student, as the project investigator, aimed to accomplish the
goals by: assessing provider knowledge of the 14-item CSQ tool, providing teaching handouts to
the providers, and in supervising the implementation of the 14-item CSQ by the triage nurse to
20 random patients with chronic pain for one implementation time period. The educational
materials included information regarding positive and negative coping strategies and were meant
for providers to dispense to patients identified to have poor coping mechanisms (See Appendix
E). These handouts were intended to initiate an open line of communication regarding healthy
and unhealthy coping strategies.

The overarching purpose/aim of the QI project included provider education of the CSQ in
order for them to evaluate current coping strategies of patients with chronic pain and address
necessary interventions.

Goal #1: related to program/intervention/providers: inform the providers of the outpatient clinic
about the availability of an evidence-based tool (14-item CSQ), used to assess coping strategies
of patients with chronic pain.

Objectives:

- Recruit providers agreeable to participate in the project who are interested in the
  CSQ and chronic pain.
- The providers will be given a pre survey, prior to implementation of the tool to assess current
  knowledge before education.
- Once agreed upon, the CSQ will be implemented into practice, by being made available by the
  triage nurse to 20 random patients with a diagnosis of chronic pain.
- Participating providers will discuss the results with the patients who completed the CSQ, during
  the visit, and will be prepared to provide examples of healthy coping strategies for to deal with
  chronic pain.
• The participating providers will complete a post survey following completion of the project implementation and will see the perceived need for a CSQ tool for all patients with chronic pain.

Goal #2: related to the population: successful implementation of the CSQ to 20 random patients with chronic pain will provide a measure of addressing coping strategies used currently and a channel to address healthy mechanisms in order to help reduce unhealthy coping mechanisms for chronic pain.

Objectives:
• 20 random patients with chronic pain will be provided with one on one discussion about coping strategies during the visit by the healthcare provider.
• All patients with chronic pain will be provided with the applicable handout as requested following completion of the tool.

Expected Outcomes

Expected outcomes regarding participation of providers has been established. Fifty percent of providers agreed to participate in implementation of the CSQ to 20 patients with chronic pain during routine visits. One hundred percent of participating providers chose to complete the pre/post surveys and the triage nurse agreed to offer the CSQ to 20 random patients with a diagnosis of chronic pain upon arrival to triage.

Description of the group, population or community

The site chosen for the capstone project was a family medical center practice in rural New Mexico, serving a wide range of patients including newborns through the elderly population. Resources for this project included the providers, triage nurse, participants, and clinic exam rooms.

The population of the target city in New Mexico in 2013 was 5,152, according to City-Data.com (2015). Of the population, 56.7% are of the Hispanic race, 38.4% are white, and 2.9%
are American Indian, with Asian and African Americans making up the remaining percentage. Spanish is the primary language spoken in many homes and English as a second language is utilized in 32.8% of the homes. Persons in this community who are <25 years are 32.0%, 25-44 are 26.2%, 45-64 are 27%, and >64 make up 18.7% of the population. Females are 52.1% of the total population. The median household income was 27,648 in 2012 with 28.9% below poverty level. The unemployment rate of 12.6% is greater than the 7.9% national average. The educational level of the community is 71.5% high school graduates or obtained GED and 10.5% have college degrees. According to the County Community Health Profile (2012), obese/overweight adults constitute 68.9% of the population. The Body Mass Index (BMI) of adolescents above the 95th percentile is 14%. Adolescent smokers constitute 23.1% of the youth, where adult smokers constitute 23.0% of the population. The leading cause of death in the county is heart disease with malignant neoplasms second, unintentional injuries third, chronic respiratory diseases fourth, with Diabetes Mellitus fifth. The majority of the patients at the clinic are Medicare/Medicaid recipients. The remainder are uninsured, privately insured, or are charged on a sliding fee-scale.

**Ethics and Human Subjects Protection.**

Based on the criteria for the University of Massachusetts, Amherst, Institutional Review Board (IRB) the QI project did not qualify for IRB review. The DNP project was a quality improvement project completed within a primary care setting, with the goal of improving care through the translation of evidence into practice. Protection of human subjects and confidentiality was maintained through Health Insurance Portability and Accountability Act (HIPPA) and fell within the customary Standard of Care for the office practice (United States Department of Health & Human Services, 2003).
In the project, the DNP student provided education to providers and the triage nurse, pre-implementation, to identify knowledge and spur along the providers in implementing a 14-item CSQ tool to patients during office visits for chronic pain. The triage nurse was informed to offer the CSQ to 20 random patients with a diagnosis of chronic pain. Implementing a survey and questionnaire posed little overall risk to patient or staff. No identity or privacy concerns were identified in the project, as all information gathered from the visits were part of the patients’ private health information record. The information was recorded into the encrypted electronic medical record and was safely protected. When collecting and sharing data, no names were used.

Upon completion of the proposed project, the pre and post survey was compared for consistency. The pre and post survey was delivered to the participating providers and assessed if the implementation of the 14-item CSQ would benefit patients with chronic pain, in the future. No medical records were taken from the clinical site. Confidentiality was maintained at all stages of the research translation project. Protection of data collected was maintained through storage of data in a locked storage area within the DNP students’ home.

**Organizational analysis of project site**

The rural health clinic employs several key stakeholders; two physicians and two nurse practitioners. A nurse midwife practices in the clinic two days a week and sees all Obstetric/Gynecological patients. Four nurses assist these providers (MDs, NPs, and nurse midwife) in the office. Multiple staff members work in the reception area managing appointments, obtaining prior authorizations and payments from insurance companies, and performing billing and coding. The stakeholders include the providers, nurses, and office
personnel of the clinic. Of the providers, two nurse practitioners and one triage nurse communicated an interest in implementation of the capstone project and two providers refused.

Services provided in the aforementioned clinic include a wide range of medical services including; physical examinations, routine health screenings, immunizations, treatment of occasional and on-going illnesses, and minor ambulatory care. Laboratory and Radiology is accessible at the hospital locally.

**Sample**

Inclusion criteria included any patient who had a diagnosis of chronic pain. In the project, patients of all ages, race, and both sexes were included with the goal of assessing feasibility of implementing the screening process and intervention. The triage nurse is fluent in speaking Spanish and agreed to interpret for anyone who could not read or speak English. Exclusion criteria was anyone without a diagnosis of chronic pain.

**Evidence of stakeholder support**

The clinic has a policy implemented for patients who are prescribed narcotics for pain management. All patients prescribed narcotics are required to sign a pain contract prior to receiving a prescription. The pain contract addresses patients selling or overusing medications. According to the NP mentor for the project, the pain contract is a beneficial tool for the clinic, however no policy existed addressing non-pharmacological chronic pain management, leaving patients with no identifiable tools to assess for coping or deal with chronic pain. The key stakeholders in the implementation of the project were the two nurse practitioners and triage nurse.
Barriers and Facilitators

The participating providers and triage nurse were all facilitators of the project. Each was supportive and open to suggestions for improvement. The physicians who refused to participate in the beginning were considered barriers to the project, as both were negative and unsupportive of the project. Another barrier to project completion, was the education provided before the first implementation, by the DNP student. A misunderstanding about the use of the CSQ was discovered. The clinic was undergoing construction during the first implementation, creating stress and challenges for the providers regarding implementing a new process during exams. Therefore, the providers bypassed the triage nurse, and read and scored the CSQ for the patients. Upon reading the CSQ to the patients, the providers only offered three choices (0= never do; 3= sometimes do; and 6= always do), instead of a Likert type scale to include six choices (0=never do; (1and 2 if chosen are perceived by patient to be in between 0 and 3); 3= sometimes do; (4 and 5 if chosen are perceived by patient to be between 3 and 6); and 6= always do). The DNP student realized modification of the CSQ tool was needed. After discussion with the Chair person and modification of the CSQ tool (See Appendix F, page 51), the DNP student returned to the clinic for teach and teach back of the CSQ and Likert scale, to triage nurse and participating providers and re-launched the project.

Upon completion of the project, all barriers were overcome, except the feasibility of the same patient sample returning to the clinic for re implementation of the CSQ. Creating a project limitation, a separate group, somewhat similar but not matched, was used. The limitation was beneficial as a great learning experience was realized for the project leader, providers, and staff. The implementation of the project a second time, helped with buy-in of the physician who was negative at onset of the project. The physician acknowledged observing a positive change in the
patient population who previously participated and stated the CSQ along with educational handouts would be beneficial for future and current patients.

Resources demonstrated by the results of the project included, stakeholders expressing interest in evidence based practices related to the CSQ. The two nurse practitioners acknowledged the need for a refresher of the plan, to work with patients suffering from chronic pain. Barriers of buy-in and concern for work flow problems existed for the staff and providers. However; the providers acknowledged a positive impact, regarding education about the CSQ, and the process of implementation made the set of barriers resolvable.

Results

Implementation of a project is exerting leadership and direction of the project (Zaccagnini & White, 2011). The DNP student lead the project by examining each step and evaluating evolvement against goals and objectives, the evaluation plan, timeline, and appropriateness to the problem acknowledged in the needs assessment. The DNP student remained on task and did not vary from the plan. Dates and times for pre-implementation, implementation, and post-implementation was decided by the team leader and team members (2011). The DNP student considered possible threats and barriers to the project which included; lack of funding, time frame barriers, and technology issues.

Discussing chronic pain management with providers of the facility, led to the determination a large number of patients were being treated for chronic pain. The nurse practitioner/preceptor for the DNP student agreed a gap existed in the current approach to chronic pain management. At the time of implementation, no tool was being used to assess coping strategies of patients with chronic pain. A strategy identified by the DNP student, to mediate the deficit was the use of a tool to assess how patients were currently coping. The 14-
item CSQ, when used by the providers, as a part of the assessment process, had potential to identify patients suffering from chronic pain, who were lacking in positive coping strategies. The 14-item CSQ, pre survey, and post survey were the specific items implemented for this Capstone project by the student.

A pre survey was given to the participating providers to ascertain current knowledge regarding pain control and coping strategies. The survey determined, the providers had no previous training regarding non-pharmacological interventions for chronic pain and both providers had positive attitudes regarding education for patients regarding non-pharmacological coping mechanisms. Additionally, the clinic staff was lacking in education regarding coping mechanisms for chronic pain. The long sustained notion of providers that pharmacological intervention is the only choice for patients with chronic pain, was not the belief of the participating providers. The packet, including the 14-item CSQ and educational handouts (Appendix E), was delivered to providers and triage nurse, on 11/2/15, for implementation. Education regarding the 14-item CSQ was provided. The DNP student read the CSQ instructions, as stated at the bottom of the tool, and all voiced understanding. The educational handouts were discussed by all involved. No questions were voiced. Over a two week period, the implementation took place and was completed on 11/13/15.

The plan was for the triage nurse to present the questionnaire randomly to ten patients per provider with a diagnosis of chronic pain. Patients were not forced to complete the questionnaire. The patients’ score determined if education regarding coping strategies were needed and the provider ensured the handouts with educational information was readily available. The provider documented education provided on the CSQ and set aside until there were 20 questionnaires offered.
During tabulation of results, the DNP student determined the plan had likely not been followed as intended. It appeared that providers only offered options of 0, 3, and 6 (rather than ensuring patients had 0, 1, 2, 3, 4, 5, and 6 as choices) for possible scores on each question of the questionnaire, rather than allowing for the 6 digit spread intended by the Likert scale.

The DNP student, as project leader, returned to the clinic and verified the process that was used by the providers and triage nurse. Renovations to the clinic began at the time of implementation, creating a non-conducive environment for the triage nurse to provide the CSQ. The triage room was unavailable; therefore, the triage nurse was in the same exam room as the provider at times. The provider indicated, in order to save time, she read the questionnaires aloud to patients and completed them herself. She offered only the three choices 0, 3, and 6 for coping responses (found at bottom of tool as three examples of the range between 0 and 6, not including all six integers), scored, and tallied the questionnaires herself rather than using the triage nurse who was trained by the DNP student. Upon further discussion with the Chairperson, a determination was made, the project was not implemented as originally proposed and the CSQ was incorrectly used. A need for more thorough education regarding the CSQ and its intended application was realized as was the necessity to execute teach and teach back educational method for all facility personnel. Therefore, in accordance with a Continuous Quality Improvement project method for a QI project design, modification and reimplementation of the project was planned.

The QI process allowed the DNP student to modify and initiate the intervention for a second time. After an in depth debriefing and strategizing session with the facility personnel, a visual analog scale was added to the CSQ (See Appendix F) for clarification of the scoring technique as in Jensen, Keefe, Lefebvre, Romano, and Turner (2003). The education was
modified and retaught to providers and triage nurse to include the visual analog scale and the necessity of offering all choices from 0-6 (0= never do; (1 and 2 if chosen are perceived by patient to be in between 0 and 3); 3= sometimes do; (4 and 5 if chosen are perceived by patient to be between 3 and 6); and 6= always do) for each question. Teach back was completed and the providers and triage nurse restated the instructions for implementation of the 14-item CSQ and included the instructions of the visual analog scale. Teach back technique met literature requirement for teach back provided (DeWalt et al., 2010). The project was launched a second time with more efficiency and effectiveness on 2/1/16. Much was learned by the DNP student regarding educating participants involved in a Quality Improvement project. The providers and triage nurse also learned how not following instructions on a tool could lead to less than ideal data collection.

The second implementation of the 14-item CSQ included the addition of the visual analog scale for clarity. The triage nurse offered the 14-item CSQ to another 20 random patients with a diagnosis of chronic pain. All 20 patients completed the CSQ while waiting on the providers. Upon entering the exam room, the providers scanned the CSQ into the medical record and tallied the results. The participating providers offered the educational handouts to all 20 patients, regardless of the score on the CSQ. They decided to provide handouts and teach all patients with chronic pain, rather than just those recognized to have poor coping. Of course, patients recognized to have poor coping strategies were targeted and counseled. Additionally, the decision was made to reinforce positive coping strategies recognized for those using them. The providers stated, “All patients with chronic pain could benefit from the educational handouts”.

The DNP student once again returned to the clinic and the data was compiled to assess the number of patients who refused to fill out the questionnaire, the number of patients who
completed the CSQ, the number of patients provided with education regarding coping strategies, the number of patients using positive coping strategies, and the number of patients with poor to no coping strategies. The DNP student was able to add more tightness, rigor, clarity, and detail in teach back, promoting a more seamless process during the second implementation.

Provider one stated, “the majority of patients were open to the CSQ and education provided”. Provider two stated, “a few patients seemed to not care and just wanted medication refills, but accepted the information anyway”. Provider two voiced, “the CSQ opened a door for discussion regarding positive coping strategies and what negative coping strategies were (as some patients do not know the difference)”. The participating providers voiced surprise at the number of patients who did not know about coping strategies and had never been educated on non-pharmacological coping mechanisms. Both providers indicated a desire to continue with the CSQ and provide a follow up CSQ in three months to see if the patients are implementing strategies taught and if scores on the CSQ would change over time. Both providers stated the CSQ did not take too much time during the exam and the tool was easy to implement. Another positive outcome of the second implementation of the project was that the DNP student met with one of the physicians of the practice who had chosen not to be involved in the project, and he stated he saw the results and implications of the project clearly now and agreed to join the other providers in using the CSQ to determine patient benefit.

Outcomes of Implementation and Monitoring

During the first implementation (11/2/2015 – 11/13/2015), two of 20 patients refused to answer the questions, 18 were completed. The total score possible on the CSQ was 84. The highest score was 33 while the lowest score was 0. The mean score was 14.33, the median was 13.5, and the mode was 12. This was suggestive that few patients were using any positive
coping strategies prior to the visit. During the visit, the provider discussed the score with the patient and offered examples of positive coping strategies. Handouts, enveloping education techniques regarding positive coping strategies were made available for the patients. The provider noted education provided on the CSQ. All 18 patients accepted the handouts without complaint.

During the second implementation (2/1/2016 – 2/8/2016), no one refused to complete the CSQ, all 20 were completed. The total score possible on the CSQ was still 84. The highest score was 57 while the lowest score was 12. The mean score was 37.75, the median was 37, and the mode was 34 & 37 which indicates poor coping. The implementation results, although less poor overall, were still suggestive that few patients were using positive coping strategies prior to the visit. During the visit, the provider discussed the score with the patient and provided examples of positive coping strategies. The providers agreed to furnish educational handouts to all 20 patients, as it was the consensus, all patients can benefit from the examples of positive and negative coping strategies. All 20 patients accepted the handouts without complaint. The DNP student returned to the clinic when project completed, to gather the information and compile the data. The illustration below depicts demographic data for implementation one (11/2/2015 - 11/13/2015) and implementation two (2/1/2016 – 2/8/2016). Although completely random different samples were ultimately used, the samples were similar in gender, ethnicity, and age.
The questions on the 14-item CSQ are grouped to measure extent of coping (positively or negatively) on six subscale variables: diverting attention (Questions 1 & 8); reinterpreting pain sensations (Questions 2 & 9); catastrophizing (Questions 3 & 10); ignoring (Questions 4 & 11); praying or hoping (Questions 5 & 12); coping self-statements (Questions 6 & 13); and increased behavioral activities (Questions 7 & 14).
Coping Strategies Questionnaire (CSQ)
Results: Implementation 1
11/2/15-11/13/15

N=18

Legend of Key Subscale Variables from CSQ

- Diverting Attention Q 1&8
- Reinterpreting Pain Sensations Q 2&9
- Catastrophizing Q 3&10
- Ignoring Q 4&11
- Praying or Hoping Q 5&12
- Coping Self Statements Q 6&13
- Increased Behavioral Activities Q 7&14

*Figure 3. Implementation 1 Results.*
According to the Figures 1 and 2 above, implementation results were fairly similar. Although patients were given only three choices during implementation one, evidence showed patients had poor coping patterns. During implementation two, those patients were given the six response choices and the data scatter showed a better spread across response choices and a clearer picture of what the patients were thinking about their coping abilities/strategies. The coping self-statements mean scores and the catastrophizing and praying or hoping mean scores were noteworthy. The patients in the project scored themselves similarly to subjects’ scores found in the literature (Riddle & Jensen, 2013).

Results determined more patients ignored the pain during the first implementation and more patient’s catastrophized and prayed or hoped about the pain during the second implementation with more patients showing evidence of coping self-statements. Perhaps when
lumped into only three choices (0, 3, or 6), patients during the first implementation of the project skewed to ignoring the pain, rather than in being able to determine more discrete coping responses (positive or negative), since they were not given the full range of Likert choices (0-6). Ultimately, given there were two different groups of patients, comparison across groups and any generalization is not possible, yet the results were consistently obvious, patients with chronic pain coming to the target practice were not coping well with their pain. The process indicated interventions were needed for both groups. This, in part, led to the decision by the providers that all patients, regardless of CSQ score should receive individualized education and counseling, in general, and geared toward their results on the CSQ, to help foster positive coping and prevent continued or new negative coping.

A post survey was given to the providers following the first implementation and pre/post surveys were compared. The post surveys were suggestive of both providers changing strategies used, when treating patients with chronic pain, to include assessing coping strategies and providing handouts containing education for the patients. The providers agreed, as result of the project, the practice of discussing positive coping strategies was beneficial. Both providers will continue engaging in the discussion, during all exam visits with patients who have a diagnosis of chronic pain. The providers discovered the CSQ to be a beneficial tool for patients with chronic pain and there were no work flow issues related to completion and scoring of the tool. Provider one suggested the CSQ tool was beneficial in recognizing those patients who suffer from chronic pain and are unaware of positive coping strategies available. At this point in data collection and early analysis by the providers, the third provider, who refused to take part in the project, has not weighed in as yet in the project and is not discussed herein.
Discussion/Interpretations

Following implementation of the project on two different occasions, the DNP student, as project leader, learned critical lessons. Connections were made regarding the QI process and the necessity of teach back. According to the U.S. Department of Health and Human Services (2011), Quality Improvement comprises organized and incessant actions, leading to quantifiable improvement in health care services and the health status of specific patient groups. The realization to continuously assess, plan, implement, and evaluate is necessary to culminate the project. The DNP student learned the importance of teach back as a rigorous, step by step process, to ensure complete understanding of project participants. Teach back before the first implementation would have yielded different results. After the second implementation, a total understanding of the instructions was evident and was implemented as intended. The third provider, the physician who initially refused to participate in the implementation of the project, realized the significance of the CSQ and its consistent and alarming results, once the CSQ was implemented to 38 patients.

Similar to the investigation results of Riddle and Jensen (2013) using the 14-item CSQ to assess 873 subjects where they found Catastrophizing and Praying or Hoping subscale variables to be the strongest for recognizing participants with significant functional deficits, Implementation #2, yielded comparable results when the full Likert scale was used by the patients when completing the questionnaire. In addition, unhealthy coping was identified and participating providers agreed to implement the CSQ tool and provide individualized education, regarding positive coping strategies, to all patients being treated for chronic pain in order to facilitate healthy coping. Suggestions of healthy coping strategies include: finding a support system, remaining active, relaxation techniques, spirituality, and visual imagery.
Suggestions and Future Recommendations

Replication of the work is needed for future intervention to facilitate continuity of care. An investigative study would be beneficial for a nurse scientist, regarding the impact of the protocol, survey, and the development of the therapeutic relationship among providers and patients to help cope with chronic pain, while providing medications.

Conclusion

The research translation project was focused on the two nurse practitioners who implemented the 14-item CSQ into practice, as an evidence-based screening tool. The population of focus included 18 patients during implementation one and then 20 more during implementation two of the project, for patients with a diagnosis of chronic pain. The conclusion was realized, patients suffering from chronic pain have a need for both pharmacological and non-pharmacological pain management. The DNP student, acting as project leader witnessed evidence of issues regarding poor coping strategies by patients with chronic pain. Without implementing the CSQ, the totality of impact of poor coping by patients would be unknown. The CSQ allows for the development of a robust therapeutic relationship between the provider and patient, allowing a connection on a deeper level. Once the connection was made, the providers added the CSQ and education protocol, to include handouts, without question. As a result of the DNP project, the effects were so profound that the physician, who had refused to participate at the onset of the project, was motivated to mandate use of the CSQ as a sustainable tool for all patients with chronic pain as a new protocol for the clinic.

The 14-item CSQ, when used as a part of the assessment process, has potential to identify patients suffering from chronic pain, who are lacking in coping strategies, thereby increasing their suffering and adding to a poorer quality of life.
implemented, patient outcomes of improved pain self-management have the potential to improve quality of life.

**Dissemination**

The project will be presented on Scholarship Day at UMASS, as a poster presentation and will be submitted to Scholar Works for publication. Abstracts will be submitted to the National DNP Annual Conference and the National Conference on Pain for Frontline Practitioners. The DNP student will contact the editor-in-chief of selected peer-reviewed journals, to include *Pain Medicine Journal* and *The Journal of Musculoskeletal Pain* to address potential for publication.
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from http://www.who.int/features/factfiles/health_inequities/en/
### Appendix A

Original 14-item Coping Strategies Questionnaire used in Implementation #1

(11/2/2015-11/13/2015)

<table>
<thead>
<tr>
<th>Item</th>
<th>Question</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I think of things I enjoy doing</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>I just think of it as some other sensation, such as numbness</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>It is terrible and I think it is never going to get any better</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>I don’t pay any attention to it</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>I pray for the pain to stop</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>I tell myself I can’t let the pain stand in the way of what I have to do today</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>I do something active like household chores or projects</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>I replay in my mind pleasant experiences in the past</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>I pretend it is not a part of me</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>I feel I can’t stand it anymore</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>I ignore it</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>I try to think years ahead, what everything will be like after I’ve gotten rid of the pain</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>I see it as a challenge and don’t let it bother me</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>I do something I enjoy such as watching TV or listening to music</td>
<td></td>
</tr>
</tbody>
</table>

Appendix B

Transactional Model of Stress


*Figure 1.* Flow chart showing stress and perception.
Appendix C

CHRONIC PAIN AND COPING STRATEGIES PROJECT
PRE-INTERVENTION SURVEY

Date:

1. Have you had any training on non-pharmacological interventions for chronic pain? Circle your response.

   • Yes, please provide details:
     ____________________________________________________________
     ___________________________________________________________________

   • No
   • Don’t know/can’t remember

Coping mechanisms are an adaptation to environmental stress that is based on conscious or unconscious choice that enhances control over behavior or gives psychological comfort. Random House (2015). Coping mechanism. Retrieved from http://dictionary.reference.com/browse/coping+mechanism

2. Please indicate your feelings about the following statements by circling one choice only
   a. Most patients can benefit from education on non-pharmacological coping mechanism for chronic pain.
      Strongly Agree  Agree  Disagree  Strongly Disagree  Unsure/ don’t know
   b. More can be done in my workplace to educate patients with chronic pain on coping mechanisms.
      Strongly Agree  Agree  Disagree  Strongly Disagree  Unsure/ don’t know
   c. Pharmacological intervention is a necessity for patients with chronic pain.
      Strongly Agree  Agree  Disagree  Strongly Disagree  Unsure/ Don’t know
   d. Education for non-pharmacological interventions for chronic pain is a necessity for patients with chronic pain.
      Strongly Agree  Agree  Disagree  Strongly Disagree  Unsure/ Don’t know
   e. In most cases there is no choice but pharmacological intervention for patients with chronic pain.
      Strongly Agree  Agree  Disagree  Strongly Disagree  Unsure/ Don’t know

3. Rate your knowledge of positive coping strategies for chronic pain
4. List any actions you personally take now to educate patients with chronic pain on non-pharmacological interventions for pain

______________________________________________________________________________

______________________________________________________________________________

______________________________________________________________________________

______________________________________________________________________________

______________________________________________________________________________

THANK YOU FOR COMPLETING THIS SURVEY.
Appendix D

CHRONIC PAIN AND COPING STRATEGIES PROJECT
POST INTERVENTION SURVEY

Date:

1. Based on the project, have you changed any of the strategies you use when treating patients for chronic pain?

   A great amount  a moderate amount  not much/none

2. Please indicate your feelings about the following statements by circling one choice only:
   a. Most patients can benefit from education on non-pharmacological coping mechanisms for chronic pain.
      Strongly Agree  Agree  Disagree  Strongly Disagree  Unsure/ don’t know
   b. More can be done in my workplace to educate patients with chronic pain on coping mechanisms.
      Strongly Agree  Agree  Disagree  Strongly Disagree  Unsure/ don’t know
   c. Pharmacological intervention is a necessity for patients with chronic pain.
      Strongly Agree  Agree  Disagree  Strongly Disagree  Unsure/ don’t know
   d. Education for non-pharmacological interventions for chronic pain is part of my job.
      Strongly Agree  Agree  Disagree  Strongly Disagree  Unsure/ don’t know
   e. In most cases there is no choice but pharmacological intervention for patients with chronic pain.
      Strongly Agree  Agree  Disagree  Strongly Disagree  Unsure/ don’t know

3. As a result of this project have you noticed any changes or improvements to policies, routines or practices in the workplace that aim to provide education regarding positive coping strategies to patients with chronic pain?

   • Yes  • No  • don’t know/can’t remember

THANK YOU FOR COMPLETING THIS SURVEY.
Hand, A., 2015
Appendix E

Table 1

*Healthy Coping Strategies.*

Chronic pain is physically and psychologically stressful and its constant discomfort can lead to anger and frustration with yourself and your loved ones. By definition, chronic pain is pain that lasts longer than six months and affects how a person lives their daily life. Mental and emotional wellness is equally important — psychological techniques and therapy help build resilience and teach the necessary skills for management of chronic pain.

American Psychological Association offers the following tips on coping with chronic pain:

<table>
<thead>
<tr>
<th>Manage your stress. Emotional and physical pains are closely related, and persistent pain can lead to increased levels of stress. Learning how to deal with your stress in healthy ways can position you to cope more effectively with your chronic pain. Eating well, getting plenty of sleep and engaging in approved physical activity are all positive ways for you to handle your stress and pain.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Talk to yourself constructively. Positive thinking is a powerful tool. By focusing on the improvements you are making (i.e., the pain is less today than yesterday or you feel better than you did a week ago) you can make a difference in your perceived comfort level. For example, instead of considering yourself powerless and thinking that you absolutely cannot deal with the pain, remind yourself that you are uncomfortable, but that you are working toward finding a healthy way to deal with it and living a productive and fulfilling life.</td>
</tr>
<tr>
<td>Become active and engaged. Distracting yourself from your pain by engaging in activities you enjoy will help you highlight the positive aspects of your life. Isolating yourself from others fosters a negative attitude and may increase your perception of your pain. Consider finding a hobby or a pastime that makes you feel good and helps you connect with family, friends or other people via your local community groups or the Internet.</td>
</tr>
<tr>
<td>Find support. Going through the daily struggle of your pain can be extremely trying, especially if you’re doing it alone. Reach out to other people who are in your same position and who can share and understand your highs and lows. Search the internet or your local communities for support groups, which can reduce your burden by helping you understand that you’re not alone.</td>
</tr>
<tr>
<td>Consult a professional. If you continue to feel overwhelmed by chronic pain at a level that keeps you from performing your daily routine, you may want to talk with a mental health professional, such as a psychologist, who can help you handle the physical and psychological repercussions of your condition.</td>
</tr>
</tbody>
</table>

Appendix E

Table 2

_Chronic Pain Coping Techniques._

The important role the mind plays in chronic pain is clearly recognized in the medical literature, as well as in the International Association for the Study of Pain's definition of pain, which states that **pain is always subjective and is defined by the person who experiences it.**

The result is that the brain can also learn how to manage the sensation of pain. Using the mind to control chronic pain, or coping strategies, for managing persistent pain, may be used alone or in tandem with other pain management therapies.

The use of the chronic pain management techniques outlined below can help patients feel less dependent on pain killers and feel more empowered to be able to control their pain.

<table>
<thead>
<tr>
<th>Technique</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relaxation training</td>
<td>Relaxation involves concentration and slow, deep breathing to release tension from muscles and relieve pain. Learning to relax takes practice, but relaxation training can focus attention away from pain and release tension from all muscles. Relaxation tapes are widely available to help you learn these skills.</td>
</tr>
<tr>
<td>Biofeedback</td>
<td>Biofeedback is taught by a professional who uses special machines to help you learn to control bodily functions, such as heart rate and muscle tension. As you learn to release muscle tension, the machine immediately indicates success. Biofeedback can be used to reinforce relaxation training. Once the technique is mastered, it can be practiced without the use of the machine.</td>
</tr>
<tr>
<td>Visual imagery and distraction</td>
<td>Imagery involves concentrating on mental pictures of pleasant scenes or events or mentally repeating positive words or phrases to reduce pain. Tapes are also available to help you learn visual imagery skills.</td>
</tr>
<tr>
<td>Distraction techniques</td>
<td>Distraction techniques focus your attention away from negative or painful images to positive mental thoughts. This may include activities as simple as watching television or a favorite movie, reading a book or listening to a book on tape, listening to music, or talking to a friend.</td>
</tr>
</tbody>
</table>

To prepare for any chronic pain coping technique, it is important to learn how to use focus and deep breathing to relax the body. Learning to relax takes practice, especially when you are in pain, but it is definitely worth it to be able to release muscle tension throughout the body and start to remove attention from the pain.

Coping techniques for chronic pain begin with controlled deep breathing, as follows:

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Try putting yourself in a relaxed, reclining position in a dark room. Either shut your eyes or focus on a point.</td>
<td></td>
</tr>
<tr>
<td>Then begin to slow down your breathing. Breathe deeply, using your chest. If you find your mind wandering or you are distracted, then think of a word, such as the word &quot;Relax,&quot; and think it in time with your breathing...the syllable &quot;re&quot; as you breathe in and &quot;lax&quot; as you breathe out.</td>
<td></td>
</tr>
<tr>
<td>Continue with about 2 to 3 minutes of controlled breathing.</td>
<td></td>
</tr>
</tbody>
</table>
Once you feel yourself slowing down, you can begin to use imagery techniques

Eleven specific imagery and chronic pain control techniques that are effective for pain control include:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
</table>
| 1. **Altered focus**  
This is a favorite technique for demonstrating how powerfully the mind can alter sensations in the body. Focus your attention on any specific non-painful part of the body (hand, foot, etc.) and alter sensation in that part of the body. For example, imagine your hand warming up. This will take the mind away from focusing on the source of your pain, such as your back pain. |   |
| 2. **Dissociation**  
As the name implies, this chronic pain technique involves mentally separating the painful body part from the rest of the body, or imagining the body and mind as separate, with the chronic pain distant from one’s mind. For example, imagine your painful lower back sitting on a chair across the room and tell it to stay sitting there, far away from your mind. |   |
| 3. **Sensory splitting**  
This technique involves dividing the sensation (pain, burning, pins and needles) into separate parts. For example, if the leg pain or back pain feels hot to you, focus just on the sensation of the heat and not on the hurting. |   |
| 4. **Mental anesthesia**  
This involves imagining an injection of numbing anesthetic (like Novocain) into the painful area, such as imagining a numbing solution being injected into your low back. Similarly, you may then wish to imagine a soothing and cooling ice pack being placed onto the area of pain. |   |
| 5. **Mental analgesia**  
Building on the mental anesthesia concept, this technique involves imagining an injection of a strong pain killer, such as morphine, into the painful area. Alternatively, you can imagine your brain producing massive amount of endorphins, the natural pain relieving substance of the body, and having them flow to the painful parts of your body. |   |
| 6. **Transfer**  
Use your mind to produce altered sensations, such as heat, cold, anesthetic, in a non-painful hand, and then place the hand on the painful area. Envision transferring this pleasant, altered sensation into the painful area. |   |
| 7. **Age progression/regression**  
Use your mind’s eye to project yourself forward or backward in time to when you are |   |
pain-free or experiencing much less pain. Then instruct yourself to act "as if" this image were true.

8. **Symbolic imagery**
   Envision a symbol that represents your chronic pain, such as a loud, irritating noise or a painfully bright light bulb. Gradually reduce the irritating qualities of this symbol, for example dim the light or reduce the volume of the noise, thereby reducing the pain.

9. **Positive imagery**
   Focus your attention on a pleasant place that you could imagine going - the beach, mountains, etc. - where you feel carefree, safe and relaxed.

10. **Counting**
    Silent counting is a good way to deal with painful episodes. You might count breaths, count holes in an acoustic ceiling, count floor tiles, or simply conjure up mental images and count them.

11. **Pain movement**
    Move chronic back pain from one area of your body to another, where the pain is easier to cope with. For example, mentally move your chronic back pain slowly into your hand, or even out of your hand into the air.

Some of these techniques are probably best learned with the help of a professional, and it usually takes practice for these techniques to become effective in helping alleviate chronic pain. It is often advisable to work on pain coping strategies for about 30 minutes 3 times a week. With practice, you will find that the relaxation and chronic pain control become stronger and last longer after you are done.

Sometimes, after you are good at using the techniques, you can produce chronic pain relief and relaxation with just a few deep breaths. You can then start to use these techniques while you are engaged in any activity, working, talking, etc. With enough experience you will begin to feel a greater sense of control over the chronic pain and its effects on your life.

Appendix E

Table 3

Strategies for Good Mental Health Wellness.

Coping skills are methods a person uses to deal with stressful situations. Obtaining and maintaining good coping skills does take practice. However, utilizing these skills becomes easier over time. Most importantly, good coping skills make for good mental health wellness.

Some good coping skills include:

<table>
<thead>
<tr>
<th>Strategies</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meditation and Relaxation Techniques</td>
<td>Practicing deep breathing techniques, the relaxation response, or progressive muscle relaxation are ways to help reduce stress and induce relaxation.</td>
</tr>
<tr>
<td>Time to Yourself</td>
<td>It is important to set aside time every day to allow yourself to relax and escape the stress of life. Give yourself a private, mini vacation from everything going on around you.</td>
</tr>
<tr>
<td>Physical Activity</td>
<td>Moving around and getting the heart rate up causes the body to release endorphins (the body’s feel good hormones). Exercising provides some stress relief.</td>
</tr>
<tr>
<td>Reading</td>
<td>Escape from reality completely by reading. Reading can help you to de-stress by taking your mind off everyday life.</td>
</tr>
<tr>
<td>Friendship</td>
<td>Having friends who are willing to listen and support one through good and bad times is essential.</td>
</tr>
<tr>
<td>Humor</td>
<td>Adding humor to a stressful situation can help to lighten the mood.</td>
</tr>
<tr>
<td>Hobbies</td>
<td>Having creative outlets such as listening to music, drawing or gardening are great ways to relax and relieve everyday stress.</td>
</tr>
<tr>
<td>Spirituality</td>
<td>Actively believing in a higher power or divine being can have many health benefits. In recent studies, it has been found that people who pray have better mental health than those who do not.</td>
</tr>
<tr>
<td>Pets</td>
<td>Taking care of a pet helps distract the mind from stressful thoughts. Studies show that pets are a calming influence in people’s lives.</td>
</tr>
<tr>
<td>Sleeping</td>
<td>The human body needs a chance to rest and repair itself after a long and stressful day. Sleeping gives the body this chance so that it is ready to perform another day.</td>
</tr>
<tr>
<td>Nutrition</td>
<td>Eating foods that are good for you not only improve your physical health, but they play a major role in your mental health. When your body gets the proper nutrients, it is better able to function in every capacity.</td>
</tr>
</tbody>
</table>

There are also negative coping skills which can hinder progress in dealing more positively with stress. Actions that are harmful to both mental and physical health include:

- Drugs
- Excessive alcohol use
- Self-mutilation
• Ignoring or storing hurt feelings
• Sedatives
• Stimulants
• Excessive working
• Avoiding problems
• Denial

These actions offer only temporary relief, if any from stress. Ignoring or covering up how you feel does not solve the problem. The next time you find yourself faced with a difficult circumstance, remember to practice your new coping skills. These skills lead to good mental health and a happier you. Adapted from Canadian Mental Health Association of Richmond, BC, 2009. Mental health wellness week: Strategies for good mental health wellness. Retrieved from http://www.mhww.org/strategies.html
## Appendix F

Refined--14-item Coping Strategies Questionnaire used in Implementation #2

(2/1/2016-2/8/2016)

<table>
<thead>
<tr>
<th>Item</th>
<th>Question</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I think of things I enjoy doing</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>I just think of it as some other sensation, such as numbness</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>It is terrible and I think it is never going to get any better</td>
<td></td>
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<tr>
<td>4</td>
<td>I don’t pay any attention to it</td>
<td></td>
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<tr>
<td>5</td>
<td>I pray for the pain to stop</td>
<td></td>
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<tr>
<td>6</td>
<td>I tell myself I can’t let the pain stand in the way of what I have to do today</td>
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<tr>
<td>7</td>
<td>I do something active like household chores or projects</td>
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<tr>
<td>8</td>
<td>I replay in my mind pleasant experiences in the past</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>I pretend it is not a part of me</td>
<td></td>
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<tr>
<td>10</td>
<td>I feel I can’t stand it anymore</td>
<td></td>
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<tr>
<td>11</td>
<td>I ignore it</td>
<td></td>
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<tr>
<td>12</td>
<td>I try to think years ahead, what everything will be like after I’ve gotten rid of the pain</td>
<td></td>
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<tr>
<td>13</td>
<td>I see it as a challenge and don’t let it bother me</td>
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<tr>
<td>14</td>
<td>I do something I enjoy such as watching TV or listening to music</td>
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