Adaptive Chronic Musculoskeletal Pain Management
Interventions for Hispanic Americans: Health and Safety
Management Approach

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Abstract

One of the core business constituents is effective safety and health management with regard to the social responsibility, brand value/image, productivity, commitment, and healthier workforce. By keeping everyone safe and healthy, business could reduce the workers’ medical expenses and insurance costs, lessen return-to-work payouts, and decrease the costs for job accommodations. Musculoskeletal injuries and disorders (MSDs) can be painful and debilitating, affecting daily quality of life, activity and productivity. Although the Hispanic population is a growing ethnic group in the United States, little is known about their MSDs-related experience and relevant pain management. This paper discusses the cultural competency of Hispanic Americans (HAs) facing access to musculoskeletal pain care barriers/challenges, and describes innovative interventions addressing the identified issues. Significant disparities have been documented on the chronic musculoskeletal pain (CMP) diagnostic techniques and identification of CMP treatments among Hispanic Americans. Several effective and innovative culturally-adapted solutions/interventions for HAs are available: Spanish of Örebro Musculoskeletal Pain Questionnaire (OMPQ), Latino Patient-Reported Outcomes Measurement Information System (PROMIS), and Spanish-language smoking cessation intervention (website-based/online, worksite-based/food trucks, and self-help smoking cessation relapse prevention materials). Innovative/effective “research to practice” health and safety management approach to mitigate musculoskeletal burdens among the Hispanic Americans is provided in the paper.

Keywords: Health and Safety, Hispanic Americans, Training and Development, Wellness Promotion, Risk Management

1. INTRODUCTION

There are imperative aspects in a sustainable business, and one of essential components of a successful business is the safety and health management. There are wide variety of reasons why occupational safety and health is crucial for running a success business including social responsibility, brand value/image, productivity, commitment, and healthier workforce [Institute for Safety and Health Management, 2014]. By keeping everyone safe and healthy, businesses could reduce the workers’ medical expenses and insurance costs, reduce return-to-work payouts, and decrease the costs for job accommodations. A healthy and vital workforce is an asset to any organization. Workplace health management and health promotion are therefore increasingly relevant for organizations. Improving the management of organizational benefits from workplace health and safety interventions [Zwetsloot, et al., 2010]. During last decades, the United States businesses have made substantial progress in addressing issues of health and safety in the workplace. Especially, the effort by management to address safety issues more comprehensively, the rise of new governmental agencies focused on safety, and an increase in research and education devoted to safety. Besides, there are growing body of evidence highlights that significant benefits can increase when protecting workers from occupational injury, as well as promoting health (wellness) activities such as health risk assessments, medical surveillance, and chronic-disease management [Loeppke et al., 2015]. Business prompted to acquaint with “worksite
health promotion” programs on a large scale in an effort to keep their employees healthier and thus reduce total health-related medical and absenteeism costs. Workplace wellness programs consisted of health screenings, smoking cessation, weight-loss education, and on-site exercise offerings, and more sophisticated efforts including the management of chronic health conditions [Loeppke et al., 2015].

Musculoskeletal disorders (MSDs) which are conditions and injuries affecting the bones, joints and muscles can be painful and debilitating, affecting daily quality of life, activity and productivity. An estimated 127 million Americans (one in two adults) are affected by a musculoskeletal condition, and MSDs accounted for 34% of all U.S. workplace injuries and illness [US Bureau of Labor statistics, 2013]. The most prevalent musculoskeletal disorders are back and neck pain (76 million adults) and arthritis and related conditions [American Academy of Orthopaedic Surgeons, 2016]. The prevalence of MSDs among Hispanic/Latino manual workers is high compared other workers in similar occupations [Mora et al., 2016]. According to newly released U.S. Census Bureau population estimates, the Hispanic population in the United States reached a record approximately 59 million in 2016, and has been the principal driver of U.S. demographic growth, accounting for half of national population growth since 2000. In 2016, Hispanics accounted for 18% of the nation’s population and were the second-largest racial or ethnic group behind whites [Flores, 2017].

Chronic musculoskeletal pain (CMP) induces tremendous physical, psychological, and psychosocial burden, impacts daily living activities, and can result in disability [Bergman, 2007; Dieppe, 2013; Eatough et al., 2012]. Chronic pain affects the performance and function of the musculoskeletal system and the stress of CMP impacts health and well-being [Corbett et al., 2007; Linton and Shaw, 2011; Kovačević et al., 2018]. The financial burden to society and the healthcare system is exacerbated by annual medical/disability/lost productivity costs (560 billion U.S. dollars) and growing prevalence (50 million of U.S. adults) [Dahlihamer et al., 2018; Freburger et al., 2009; Gore et al., 2012]. Although Hispanic Americans are among the fastest growing ethnic/racial groups in the United States [Ennis et al., 2010], their experience with CMP is largely ignored, leading to disparities with regard to prevention, treatment, and musculoskeletal pain management [Hollingshead et al., 2016].

1.1. Objectives

This paper describes the disparities of chronic musculoskeletal pain experiences and challenges among Hispanic Americans, and discusses relevant interventions/solutions including culturally-adapted pain management programs.

2. ETIOLOGY/EPIDEMIOLOGY

Sensory nervous system responds to certain (or potentially) harmful stimuli, and is able to process thermal, mechanical or chemical stimuli detected by a subpopulation of peripheral nerve fibers (i.e., nociceptors) [Basbaum and Jessell, 2000]. At the cellular level, the cell bodies of nociceptors have peripherals to innervate the target organs and central axonal branch of the spinal cord, or pressure can be applied to the cell bodies of cultured somatosensory neurons using a glass probe [Basbaum et al., 2009; Bhattacharya et al., 2008]. Nociceptive pain is the most common type of pain caused by the detection of noxious or potentially harmful stimuli by the body’s nociceptors. A different path of pain is neuropathic pain related to damaged neurons in the body consequently signaling to the central nerve system and brain [Basbaum et al., 2009].

Usually acute pain happens at the cellular level in response to tissue injury, results from activation of peripheral pain receptors and the medium diameter A delta and C sensory nerve fibers which are nociceptors. Alternations of the pain pathway lead to hypersensitivity where tissue or nerve damage elicits hyperactivity to promote guarding of the injured part. Chronic pain related to ongoing tissue injury is often caused by persistent activation of the nerve fibers and may persist long after an acute injury such as commonly experienced lower back pain. Chronic pain syndromes can also be initiated or maintained at peripheral and/or central loci [Basbaum et al., 2009].

The musculoskeletal system is one of the largest human body systems and depends on nerves, muscles and bones to provide function and structure for the body. The musculoskeletal system consists of muscles, bones, cartilage, tendons, ligaments and bursa which can contribute to pain [Carlson & Carlson, 2011]. Chronic musculoskeletal pain is a persistent or recurrent pain that arises as part of a disease process directly affecting bones, joints, muscles, or related soft tissues. Physical risk factors are postural strain, repetitive movements, overuse, and prolong immobilization. Psychosocial risk factors are stress, anxiety, high demand, low control, poor peer relations. Other contributing risk factors include sedentary lifestyle and smoking. Studies indicated that tobacco smoking has crucial negative effects on the health consequences of the musculoskeletal system [AL-Bashaireh et al., 2018].
Musculoskeletal injury or pain is one of the most common types of health concerns in the workplace and society. Low back pain, shoulder stiffness and joint pain usually rank the highest in every age or ethnicity group [Ushida, 2015]. For instance, lower back pain (LBP) is the second most common cause of disability in U.S. adults and a common reason for lost work days (149 million lost workdays) resulting in an economic burden estimated from $100 to $200 billion annually [Freburger et al., 2009].

Race/ethnicity interacts with the G allele of the A118G SNP of the mu-opioid receptor gene (OPRM1) with regard to pain sensitivity [Hastie et al., 2012]. Hispanics tend to have greater pain severity and sensitivity across most pain modalities [Hastie et al., 2012]. It is interesting to note here that Hispanics/Latinos are more sensitive to pain, but self-report fewer pain conditions [Holllingshead et al., 2016].

3. CURRENT DIAGNOSTICS AND CONTROL MEASURES OF CMP MANAGEMENT

The specific etiology of CMP is unclear in the absence of evident causes like fracture, infection, tumor or significant arthritis. The CMP situations are predominantly non-traumatic with a broad differential diagnosis regardless of careful history and examination [Gaeta et al. 2008]. Vigilant history and physical examination combined with an understanding of the relevant anatomy can often lead to the diagnosis and offer some specific red flags that may predict more serious pathology [Deyo et al., 1992]. However, it is not uncommon in the presence of chronic musculoskeletal pain that these diagnostic tools do not clearly identify the source of pain [Kuritzky, 2008]. Treatment is often delayed until a specific diagnosis is determined. Patients with chronic musculoskeletal pain relegated to their pain medications or the symptoms could be considered a manifestation of poor psychological coping skills [Katon et al. 1982; Carlson & Carlson, 2011]. Two typical treatment categories of chronic musculoskeletal pain are: 1) pharmacological such as analgesics, antidepressants and anticonvulsants; 2) non-pharmacological such as physical exercise, physical therapy and acupuncture. Non-pharmacological treatments are viewed more essential than pharmacological treatments because of problems associated with drug dependency and drug abuse [Bergman, 2007].

4. INNOVATION AND RECOMMENDATION

Hispanics/Latinos are the fastest growing minority in the United States, so it is vital to have culturally adapted chronic musculoskeletal pain treatment and management for Hispanic Americans. The following provides “research to practice” innovative solutions such as adapted/integrative pain management methods, and culturally adapted tobacco smoking cessation interventions.

4.1 OMPQ: Adaptation to cultural and language barriers and disparities

The Spanish version of Örebro Musculoskeletal Pain Questionnaire (OMPQ) is a highly reliable screening tool that can be used to assess and monitor Latino patients with chronic musculoskeletal pain [Cuesta-Vargas & González-Sánchez, 2014]. The current version was translated/validated from the original version of OMPQ [Linton & Boersma, 2003]. The OMPQ evaluates the patient’s biopsychosocial aspects and the scored items such as pain location, work absence due to pain, pain duration/intensity/frequency, functional ability, mood perceptions, patient’s estimate of prognosis and fear avoidance [Maher & Grotle, 2009]. The original OMPQ has been clinically proven to help identify patients with chronic back pain and related disability [Brown, 2008], and Spanish version of OMPQ has been validated for a cross-cultural adaptation to identify the Spanish patients with CMP at risk of developing chronic disability [Cuesta-Vargas & González-Sánchez, 2014].

4.2 PROMIS: Culturally adapted and translated model

Patient-Reported Outcomes Measurement Information System (PROMIS) implements an adapted Integrative Medical Group Visit (IMGV) one-week curriculum (e.g., stress management, healthy sleep, mindful eating, self-care massage) for low-income, Spanish-speaking Latino population with chronic pain [Cornelio-Flores et al., 2018]. The PROMIS model offers a auspicious non-pharmacological option for Hispanic Americans patients with chronic pain while addressing disparities for the non-white Hispanic population. Some of the outcomes of the Latino PROMIS/IMGV were motivation to healthier behavior, group problem solving, decreased pain experience/improved chronic pain coping, and better nutrition. In turn, the Latino culturally adapted integrative medical group visit model
is an innovative technique that addresses the emotional, psychological, and physical burden of chronic musculoskeletal pain (CMP) among Hispanic Americans with CMP [Cornelio-Flores et al., 2018].

4.3 Culturally adapted “tobacco smoking cessation” Interventions

Smoking cessation is related to greater improvement of chronic musculoskeletal pain, and possibly allows the body to instigate regeneration or healing processes [Behrend et al., 2012; Akmal et al., 2004; McDanel and Browning, 2014]. Tobacco use such as smoking among Hispanic Americans (HAs) is a growing health risk concern, therefore smoking cessation among HAs is a high health promotion priority [Webb et al., 2010; Graham et al., 2012].

4.3.1 Worksite based smoking cessation.

Hispanic/Latino workers make up a significant part of the construction workforce but have a higher rate of tobacco usage (i.e., smoking and a lower cessation rate) [Dietz et al., 2018]. Tailoring tobacco smoking treatment to Hispanic/Latino construction workers’ job circumstances and culture is essential to support their smoking cessation endeavors. One innovative method to engage the smokers in the construction sites is to partner with “food trucks” routinely visiting construction sites to support the delivery of a work-based smoking cessation intervention. This is a novel tool where public health professionals can access and disseminate health education, including culturally adapted work-based smoking cessation intervention for Hispanic construction workers. Face-to-face group cessation format at construction sites has proved more effective than telephone or computer based formats, and is more culturally acceptable than the traditional smoking cessation approach [Dietz et al., 2018].

4.3.2 Web-based/online smoking cessation program.

Although a substantial percentage of American Latinos use the Internet, they have not engaged in Web-based cessation programs as readily as other racial/ethnic subgroups [Graham et al., 2012]. A lack of culturally specific advertising efforts may partly explain this disparity. Online Spanish-language banner advertisements are needed to promote a free Spanish-language smoking cessation website. Online advertising can be an effective and cost-efficient strategy to reach and engage Spanish-speaking Latino smokers in an evidence-based Internet cessation program. Cultural targeting and smoking-relevant images can be important factors for designing advertising banners. Online advertising holds potential for Web-based cessation program implementation and research [Graham et al., 2012]. For example, a Spanish-language Web site (https://espanol.smokefree.gov/) provides free, accurate information and assistance to help Hispanics/Latinos quit smoking and stay tobacco-free [US Centers for Disease Control and Prevention (CDC), 2017].

4.3.3 Self-help smoking cessation materials.

Culturally adapting “transcreation” of validated English language self-help smoking cessation for Spanish-speaking smokers is an essential intervention for HAs to boost acceptability/receptivity of the smoking cessation and relapse prevention materials [Simmons et al., 2011]. Self-help information should also comprise the cultural characteristics/themes addressing familism and unique stressors faced by Hispanic/Latino immigrants. Moreover, financial and social benefits as well as the consistent support of family/friends to help quit smoking are crucial in the development of a Spanish-language smoking cessation intervention [Piñeiro et al., 2018].

5. CONCLUSION

Successful health and safety management development and implementation can enhance the business sustainability, social responsibility, productivity, and healthier workforce, while gaining economic benefits through reductions of medical expenses and insurance costs, and absenteeism. High prevalence of musculoskeletal injuries and disorders (MSDs) - painful and debilitating, affecting daily quality of life, activity and productivity - have been evident. While Hispanic Americans are among the fastest growing ethnic/racial groups in the U.S., their experience
with chronic musculoskeletal pain (CMP) is largely ignored, leading to disparities with regard to prevention, treatment, and musculoskeletal pain management. Significant disparities have been documented on the CMP diagnostic techniques and identification of CMP treatments among Hispanic Americans. This study discovered that several auspicious innovative culturally-adapted solutions/interventions for Hispanic Americans are available: Spanish version of Örebro Musculoskeletal Pain Questionnaire (OMPQ), Latino adapted Integrative Medical Group Visit (IMGV) Patient-Reported Outcomes Measurement Information System (PROMIS), and Spanish-language smoking cessation intervention (e.g., website-based/online, worksite-based/food trucks, and self-help smoking cessation/relapse prevention materials).

References


