ORIGINAL RESEARCH PAPER
Volume - 9 | Issue - 11 | November - 2020 | PRINT ISSN No. 2277 - 8179 | DOI : 10.36106/ijsr
INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

CHRONIC MUSCULOSKELETAL PAIN: KNOWLEDGE AND PRACTICE AMONG PRIMARY CARE PHYSICIANS OF KHOBAR AND DAMMAM, SAUDI ARABIA.

Medicine

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ABSTRACT

Background: Chronic musculoskeletal pain (CMSP) is a global health- care concern. It is a result of musculoskeletal problems of the back, neck, shoulder, knee and multi-site pain is an increasing cause of diminished quality of life, and increased demands on healthcare. **Objectives:** This study is conducted to review the management of chronic musculoskeletal pain in PHC in Khobar and Dammam, Saudi Arabia. **Methods:** A cross-sectional study conducted in all primary health centers in Khobar and Damma during period 1 June to 30 October 2020. General practitioners and family physicians of the primary health centers were included in the study. Modified version of the KnowPain-50: validated 50-item test developed in 2007 in English to assess physician knowledge, attitudes, and beliefs in initial pain assessment, defining goals and expectations, development of a treatment plan, implementation of a treatment plan, reassessment and management of longitudinal care, management of environmental issues. The questionnaire was distributed manually to the participants. **Results:** The study included 173 family physicians, 52.0% of them were females, 34.7% were between 25-30 years, 26.6% were between 31-35, 33.5% were 36 – 50 and 5.2% were 51 years old or more. Only 5.8% were family physician consultants, 42.8% family physician resident and 36.4% still general practitioners. Most of the respondents (71.7%) had only a Bachelor's degree, 11% had diploma, 9.8% got Doctorate and 7.5% had master degree. Regarding Year (s) of practice as a physician; 48.6% had1 – 5 experience, 37.6% had 6 – 16, 8.1% had 17 – 24 years and 5.7% had 25 years or more. Only 22.5% participants had attended any conferences, in-hospital training, workshops, or courses in MSK pain management since graduating as a physician. As regards the best educational method(s) for continuous education programs in chronic MSK pain management; the majority (83.8%) of subjects reported Training days in pain management centers followed by 73.9% for interactive courses, 40.5% scientific presentation by peers and 31.2% self-learning method. Most (67.1%) of the respondents reported inadequate pain assessment, 65.3% inadequate staff knowledge about pain management, 63.6% lack of psychological support services, 58.4% lack of access to professional methods, 42.2% due to lack of access to wide range of analgesics and 35.8% reported lack of equipment as a factors may affect the management of chronic MSK pain. Our study found that 43.4% of physician agree that they confident in their ability to work with patients who suffer from chronic MSK pain, 42.8% said that they confident in their ability to diagnose chronic MSK pain, more than half 52% agree that they confident in their ability to determine if a patient may benefit from behavioral intervention and 51.4% agree that they confident in my ability to communicate effectively with patients about chronic MSK pain. Our study reported; third of participants (30%) disagree that physical exercise will typically worsen pain and function in patient with arthritis, only 14.5% agree that antidepressants usually do not improve symptoms and function in chronic MSK pain patients, 37.6% said that cognitive behavioral therapy is very effective in chronic MSK pain and should be applied as early as possible in the treatment plan. **Conclusion:** In the current study, most doctors are involved in treating patients with chronic pain in their clinical practice. Doctors seem to have a good goal toward pain management but their gap in knowledge of pain due to lack of pain education during basic medical and postgraduate training limit their effectiveness in treating chronic pain. It might be necessary to include pain management into doctor's continuing medical education program

KEYWORDS

Chronic, musculoskeletal pain, Knowledge, practice, primary care physicians, Khobar , Dammam, Saudi Arabia.

INTRODUCTION:

Pain is described as an unpleasant sensory and emotional experience associated with actual or potential tissue damage. Pain serves as a warning symptom of a medical condition or injury. Chronic pain is pain that persists or recurs for longer than 3 months. Such pain often becomes the sole or predominant clinical problem in some patients. As such it may warrant specific diagnostic evaluation, therapy and rehabilitation.

Chronic pain is a frequent condition, affecting an estimated 20% of people worldwide. [1]

Pain is classified according to the *International Classification of Diseases* (*ICD*) of the World Health Organization (WHO) into seven categories as chronic primary pain, chronic cancer-related pain, chronic postsurgical and posttraumatic pain, chronic neuropathic pain, chronic secondary headache and/or orofacial pain, chronic secondary visceral pain and chronic secondary musculoskeletal pain. [1] This classification was voted into action by the World Health Assembly in 2017. [2] This study will focus on chronic musculoskeletal pain as a common presentation in the primary care centers.

According to the ICD 11, chronic musculoskeletal pain is defined as "persistent or recurrent pain that arises as part of a disease process directly affecting bone(s), joint(s), muscle(s), or related soft tissue(s)". [1] Associated with reduced activity, sleep disturbance, fatigue, and mood alterations, and can result in severe disability. [3]

This category is therefore limited to *nociceptive* pain and does not include pain that may be perceived in musculoskeletal tissues but does not arise therefrom, such as the pain of compression neuropathy or somatic referred pain. Chronic pain classification will strengthen the representation of chronic pain conditions in clinical practice and research. [2]

Musculoskeletal conditions affect:

- Joints: osteoarthritis, rheumatoid arthritis, psoriatic arthritis, gout, ankylosing spondylitis.
- Bones: osteoporosis, osteopenia, and associated fragility fractures, traumatic fractures.
- Muscles: sarcopenia.
- The spine: back and neck pain.
- Multiple body areas or systems: regional and widespread pain disorders and inflammatory diseases such as connective tissue diseases and vasculitis that have musculoskeletal manifestations. [4]

Musculoskeletal pain of neuropathic origin will be cross- referenced to neuropathic pain. Well-described apparent musculoskeletal conditions for which the causes are incompletely understood, such as nonspecific back pain or chronic widespread pain, will be included in the section on chronic primary pain. [2]

Prevalence of people across the globe who live with a painful musculoskeletal condition between 20%–33% and it is the second highest contributor to global disability. [5] Although this prevalence, researches also show results of poorly managed chronic pain. Chronic musculoskeletal pain patients are not satisfied with the clinical

treatment effect and the health system, particularly doctors, are not paying enough attention to their problem. The doctors stated that they cannot manage chronic musculoskeletal pain patients probably and that the medical treatments have a little or no effect. [6]

In the US, a training program named The Specialty Care Access Network-Extension for Community Health Outcomes (SCAN-ECHO): a video teleconferencing–based training program started in June 2011 and continues today aiming to train primary care providers on pain management. Twenty-four primary care providers from Cleveland, South Texas, and Wisconsin Veterans Affairs Medical Centers who regularly attended pain management SCAN-ECHO sessions. Results reveal positive outcomes in terms of knowledge, skills, and confidence of primary care providers in treating patients with chronic pain. [7]

Two systematic reviews in the UK in 2013 and 2017 regarding evidence-based pain management determined that there is a wide variation regarding chronic musculoskeletal pain management. Also, there is a limited utilization of the most effective treatment plan, resulting in inadequate care, excessive costs, and complications in some cases. These studies recommend that more researches are needed in order to improve chronic musculoskeletal pain management in clinical practice. [8],[9]

In a 3-year follow-up study was a part of large population-based Geriatric Multidisciplinary Strategy for the Good Care of the Elderly (GeMS) study in Finland, 2014. The study population sample was 1000 community-dwelling older participants with chronic musculoskeletal pain. Study results showed that 41% of the participants wished that the physician paid more attention to pain management. A persistent hope to receive more attention to pain management was associated with poor self-rated health.

Physicians need to have more active roles in the process of recognizing, assessing and controlling persistent pain in older people. [10]

A survey on doctors' knowledge and attitude of treating chronic pain in three tertiary hospitals in Nigeria in 2014 showed that most doctors are involved in treating patients with chronic pain in their clinical practice. Doctors seem to have a good goal toward pain management but their gap in knowledge of pain due to lack of pain education during basic medical and postgraduate training limit their effectiveness in treating chronic pain. Inadequate pain management often causes huge socioeconomic loss both to the affected and the community and is associated with reduced quality of life. It might be necessary to include pain management into doctor's continuing medical education program which has been made mandatory in Nigeria. [11]

Despite the ready availability of effective pharmacological and non-pharmacological treatments, inadequate management of pain, particularly in the elderly, is well documented in the United States, According to a national survey done in New York City in 2010. [12]

In 2001, a survey created by the Association of American Medical Colleges indicated only 3% of medical schools required a course in pain management education. Because there is an insufficient number of a pain specialist, most patients with pain are managed within primary care by physicians, nurse practitioners, and physician assistants. Unfortunately, most Primary Care Providers (PCPs) have had very little formal education or training in pain management and the training is usually fragmented and learned on the job. [13]

There is a lack of national research discussing chronic pain management in PHC. The need to address impairments in musculoskeletal health is also identified in WHO's Global Program of Work in rehabilitation, in order to improve peoples' performance.

STUDY OBJECTIVE:

This study is conducted to review the management of chronic musculoskeletal pain in PHC in Khobar and Dammam, Saudi Arabia.

METHODOLOGY:

A cross-sectional study conducted in all primary health centers in Khobar and Damma during period 1 June to 30 October 2020. General practitioners and family physicians of the primary health centers were included in the study. General practitioners and family physicians who are absent during study conduction and primary care physicians from other specialties were excluded from the study.

Sample size and sampling:

The sample size for this study was 173 physicians calculated by raosoft. Convenient sampling technique was followed.

Data collection tool (instrument): Modified version of the KnowPain-50: validated 50-item test developed in 2007 in English to assess physician knowledge, attitudes, and beliefs in initial pain assessment, defining goals and expectations, development of a treatment plan, implementation of a treatment plan, reassessment and management of longitudinal care, management of environmental issues. The survey demonstrated good internal consistency in all physician populations studied (α= 0.77-0.85). [14] The modifications included adding questions focusing on the musculoskeletal pain management.

Data Collection Technique: The questionnaire was distributed manually to the participants. Piloting was held to ensure questionnaire validity, reliability and participants understanding.

Data entry and analysis: The collected data was entered and analyzed using the Statistical Package for the Social Science (SPSS Inc. Chicago, IL, USA) version 23. Descriptive statistics will be performed. Percentages were given for qualitative variables.

Ethical consideration:

Research committee approval was obtained and written consents from all participants were obtained. Data was anonymous for patient confidentiality and all information gathered will be confidential. And will be used for study purposes only.

RESULTS:

Table 1 shows the socio-demographic features of the participants. The study included 173 family physicians, 52.0% of them were females, 34.7% were between 25-30 years, 26.6% were between 31-35, 33.5% were 36 – 50 and 5.2% were 51 years old or more. Only 5.8% were family physician consultants, 42.8% family physician resident and 36.4% still general practitioners. Most of the respondents (71.7%) had only a Bachelor's degree, 11% had diploma, 9.8% got Doctorate and 7.5% had master degree. Regarding Year (s) of practice as a physician; 48.6% had1 – 5 experience, 37.6% had 6 – 16, 8.1% had 17 – 24 years and 5.7% had 25 years or more.

Table 2 shows the conferences, caring for patients and the best educational method for continuous education programs in MSK pain management among the studied physicians. Our study reported that only 22.5% participants had attended any conferences, in- hospital training, workshops, or courses in MSK pain management since graduating as a physician. As regards the best educational method(s) for continuous education programs in chronic MSK pain management; the majority (83.8%) of subjects reported Training days in pain management centers followed by 73.9% for interactive courses, 40.5% scientific presentation by peers and 31.2% self-learning method.

Table 3 presents the physician knowledge, attitudes, and beliefs in initial pain assessment, defining goals and expectations, development of a treatment plan among the studied physicians. Regarding the factors they believe affecting the management of chronic MSK pain, our study found that 67.1% reported inadequate pain assessment, 65.3% inadequate staff knowledge about pain management, 63.6% lack of psychological support services, 58.4% lack of access to professional methods, 42.2% due to lack of access to wide range of analgesics and 35.8% reported lack of equipment as a factors may affect the management of chronic MSK pain. Our study found that 43.4% of physician agree that they confident in their ability to work with patients who suffer from chronic MSK pain, 42.8% said that they confident in their ability to diagnose chronic MSK pain, more than half 52% agree that they confident in their ability to determine if a patient may benefit from behavioral intervention and 51.4% agree that they confident in my ability to communicate effectively with patients about chronic MSK pain. Our study reported; third of participants (30%) disagree that physical exercise will typically worsen pain and function in patient with arthritis, only 14.5% agree that antidepressants usually do not improve symptoms and function in chronic MSK pain patients, 37.6% said that cognitive behavioral therapy is very effective in chronic MSK pain and should be applied as early as possible in the treatment plan.

Table (1): Characteristics of the studied family medicine physicians (N=173)

	Frequency	Percent
Age:		
25 – 30	60	34.7
31 – 35	46	26.6
36 – 50	58	33.5
51 or more	9	5.2
Gender :		
Male	83	48.0
Female	90	52.0
Current position :		
Family physician consultant	10	5.8
Family physician resident	74	42.8
Family physician specialist	26	15.0
General practitioner	63	36.4
Highest Level of education:		
Bachelor's Degree	124	71.7
Diploma	19	11.0
Doctorate	17	9.8
Master's Degree	13	7.5
Region:		
Dammam	89	51.4
Khobar	84	48.6
Year (s) of practice as a physician:		
1 – 5	84	48.6
6 – 16	65	37.6
17 – 24	14	8.1
25 or more	10	5.7

Table (2): Conferences, Caring for patients and the best educational method for continuous education program in MSK pain management among the studied physicians (N=173)

Item	Frequency (No.)	Percent (%)
Attending conferences, in- hospital training, workshops, or courses in MSK pain management since graduating as a physician:		
Yes	39	22.5
No	134	77.5
Caring for patients with chronic MSK pain during a typical week at work (how often):		
0	34	19.7
1	17	9.8
2	122	70.5
Factor(s) you believed to affect the management of chronic MSK pain:		
Inadequate staff knowledge about pain management	113	65.3
Lack of access to professional methods	101	58.4
Lack of psychological support services	110	63.6
Lack of equipment	62	35.8
Lack of access to wide range of analgesics	73	42.2
Inadequate pain assessment	116	67.1
Patient unwilling to report pain	62	35.8
The best educational method(s) for continuous education program in chronic MSK pain management:		
Training days in pain management centers	145	83.8
Interactive courses	128	73.9
Self-learning methods	54	31.2
Scientific presentation by peers	70	40.5
Other	3	1.7

Table (3): physician knowledge, attitudes, and beliefs in initial pain assessment, defining goals and expectations, development of a treatment plan among the studied physicians (N=173)

Item	Strongly agree	agree	No opinion	Disagree	Strongly disagreed
When I see consistently high scores on pain rating scales in the face of minimal or moderate pathology, this means that the patient is exaggerating his/her pain.	15 8.7%	55 31.8%	51 29.5%	37 21.4%	15 8.7%
The most accurate judge of the intensity of the patient's pain is the patient.	55 31.8%	78 45.1%	32 18.5%	6 3.5%	2 1.2%
Vital signs are always reliable indicators of the intensity of a patient's pain	20 11.6%	37 21.4%	59 34.1%	42 24.3%	15 8.7%
Patients who can be distracted from pain usually do not have severe pain.	17 9.8%	52 30.1%	66 38.2%	31 17.9%	7 4.0%
Patient's spiritual beliefs may lead them to think pain and suffering are necessary:	24 13.9%	70 40.5%	56 32.4%	20 11.6%	3 1.7%
In chronic pain, the assessment should include measurement of the pain intensity, emotional distress, and functional status:	75 43.4%	75 43.4%	16 9.2%	6 3.5%	1 .6%
Physical exercise will typically worsen pain and function in patients with arthritis.	12 6.9%	47 27.2%	39 22.5%	52 30.1%	23 13.3%

It may often be useful to give a placebo to a patient in pain to assess if he is genuinely in pain:	10 5.8%	58 33.5%	63 36.4%	31 17.9%	11 6.4%
Antidepressants usually do not improve symptoms and function in chronic MSK pain patients:	8 4.6%	25 14.5%	51 29.5%	66 38.2%	23 13.3%
Cognitive behavioral therapy is very effective in chronic MSK pain and should be applied as early as possible in the treatment plan:	32 18.5%	65 37.6%	51 29.5%	23 13.3%	2 1.2%
Long-term use of NSAIDs in the management of chronic pain has higher risk for tissue damage, morbidity, and mortality than long-term use of opioids.	13 7.5%	56 32.4%	61 35.3%	37 21.4%	6 3.5%
I am confident in my ability to assess and manage psychiatric comorbidities in patients with chronic MSK pain.	24 13.9%	76 43.9%	45 26.0%	26 15.0%	2 1.2%
I am confident in my ability to explain the risks and benefits of common interventional pain procedures.	17 9.8%	83 48.0%	44 25.4%	27 15.6%	2 1.2%
Chronic Musculoskeletal (MSK) pain is defined as “persistent or recurrent pain that arises as part of a disease process directly affecting bone(s), joint(s), muscle(s), or related soft tissue(s).	78 45.1%	82 47.4%	9 5.2%	4 2.3%	-
I am confident in my ability to work with patients who suffer from chronic MSK pain.	21 12.1%	75 43.4%	60 34.7%	17 9.8%	-
I am confident in my ability to diagnose chronic MSK pain.	20 11.6%	74 42.8%	53 30.6%	26 15.0%	-
I am confident in my ability to determine if a patient may benefit from behavioral intervention.	22 12.7%	90 52.0%	42 24.3%	19 11.0%	-
I am confident in my ability to communicate effectively with patients about chronic MSK pain. :	30 17.3%	89 51.4%	33 19.1%	21 12.1%	-

DISCUSSION:

Pain is a complex phenomenon that includes physiological, psychological, behavioral, and social components. Chronic musculoskeletal pain (CMSP) is a global health- care concern. It is classified as a part of chronic non-malignant pain, which encompasses musculoskeletal, neuropathic and visceral pain, and pain from sickle cell disease [15]. It is a result of musculoskeletal problems of the back, neck, shoulder, knee and multi-site pain is an increasing cause of diminished quality of life, and increased demands on healthcare [16, 17].

Chronic pain management is a challenging and important element of primary care. Despite the emergence of specialty pain management centers, the majority of patients with pain complaints seek medical assistance in primary healthcare centers [18]. Approximately half of all patients suffering from chronic pain are cared for by primary care providers (PCPs) [19]. Also, a large proportion of individuals with CMSP present in primary healthcare settings for management [20]. This highlights the need for optimal knowledge of pain and the practice in chronic pain management among primary healthcare (PHC) providers, especially physicians.

This is a cross-sectional study was conducted among 137 primary health centers physicians in Khobar and Dammam, KSA. The study aimed to assess the knowledge and the practice of primary care physicians (PCP) regarding management of chronic musculoskeletal pain.

Assessment of practice in chronic pain management among family and primary healthcare physicians (PHCPs) showed unsatisfactory levels of knowledge, low therapeutic goals and high prevalence of undertreated patients [21]. In KFHU, Al-Khobar, Saudi Arabia, another study demonstrates deficient knowledge and negative attitude toward pain management among physicians and nurses [22].

Our study reported that only 22.5% participants had attended any conferences, in-hospital training, workshops, or courses in MSK pain management since graduating as a physician. As regards the best educational method(s) for continuous education programs in chronic MSK pain management; the majority (83.8%) of subjects reported Training days in pain management centers followed by 73.9% for interactive courses, 40.5% scientific presentation by peers and 31.2% self-learning methods. Similar to our results, in Nigeria, another study found that only 23.3% of participants had basic medical or postgraduate training on pain management [23]. In Iran, another study reported that 37.6% of participants believed that they should receive initial education concerning pain management, 53.1% of them felt that they needed extra courses dealing with pain management, and only 9.3% believed that they had received adequate education about pain and its management [24].

Regarding the factors they believe affecting the management of chronic MSK pain, our study found that 67.1% reported inadequate pain assessment, 65.3% inadequate staff knowledge about pain management, 63.6% lack of psychological support services, 58.4% lack of access to professional methods, 42.2% due to lack of access to wide range of analgesics and 35.8% reported lack of equipment as a factors may affect the management of chronic MSK pain.

Evidence suggests that primary care providers are not well equipped to manage chronic pain effectively. Most PCPs express low confidence in their ability to effectively manage pain and pain management education is scant to non-existent in most training programs [25, 26].

Our study found that 43.4% of physician agree that they confident in their ability to work with patients who suffer from chronic MSK pain, 42.8% said that they confident in their ability to diagnose chronic MSK pain, more than half 52% agree that they confident in their ability to determine if a patient may benefit from behavioral intervention and 51.4% agree that they confident in my ability to communicate effectively with patients about chronic MSK pain. Results from another study demonstrate that primary care physicians (PCPs) are least likely to feel confident in their ability to manage musculoskeletal pain and neuropathic pain, and are least likely to favor mandatory pain education for all PCPs [27].

Musculoskeletal pain is managed by a plethora of treatment options, most delivered in primary care by first contact clinicians such as general practitioners, physiotherapists, chiropractors and osteopaths. These include non-pharmacological treatments (e.g. self-management advice and education, exercise therapy, manual therapy and psychosocial interventions), complementary therapies (e.g. acupuncture), and pharmacological interventions (e.g. analgesics, non-steroidal anti-inflammatory drugs (NSAIDs), corticosteroid injections) [28].

Our study reported; third of participants (30%) disagree that physical exercise will typically worsen pain and function in patient with arthritis, only 14.5% agree that antidepressants usually do not improve symptoms and function in chronic MSK pain patients, 37.6% said that cognitive behavioral therapy is very effective in chronic MSK pain and should be applied as early as possible in the treatment plan. The efficacy and safety of simple analgesics and NSAIDs for reducing symptoms associated with osteoarthritis and back pain is uncertain [29, 30]. In accordance to this our study reported that 32,4% of subjects agree that long-term use of NSAIDs in the management of chronic pain has higher risk for tissue damage, morbidity, and mortality than long-term use of opioids.

CONCLUSION:

In the current study, most doctors are involved in treating patients with chronic pain in their clinical practice. Doctors seem to have a good goal toward pain management but their gap in knowledge of pain due to lack of pain education during basic medical and postgraduate training limit their effectiveness in treating chronic pain. It might be necessary to include pain management into doctor's continuing medical education program

Conflict of interest:
The authors declared that there was no conflict of interest.

Budget:
No funding institutions, this study is self-funded.

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