



ASSESSMENT OF CHRONIC MUSCULOSKELETAL PAIN MANAGEMENT IN ELDERLY PATIENT AT SHAMBU GENERAL HOSPITAL, SHAMBU, HORRO, GUDURU WOLLEGA ZONE, OROMIA REGIONAL STATE, ETHIOPIA

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ABSTRACT

Back Ground: Chronic musculoskeletal pain conditions are a major burden on individuals, health systems, and social care systems, with indirect costs being predominant. This burden has been recognized by the United Nations and WHO, by endorsing the Bone and Joint Decade 2000–2010. The four major musculoskeletal conditions: Gout arthritis, rheumatoid arthritis and low back pain. Rheumatoid arthritis, which is characterized by loss of joint cartilage that leads to pain and loss of function primarily in the knees and hips, affects 9.6% of men and 18% of women aged >60 years. Increases in life expectancy and ageing populations are expected to make Rheumatoid arthritis the fourth leading cause of disability by the year 2020. **Objective:** To assess chronic musculoskeletal pain management in elderly patient at Shambu General Hospital. **Methodology:** A cross sectional study involving patient chart review was conducted to assess chronic musculoskeletal pain management in Shambu General Hospital from May 1,2018 to July 30,2018. **Result:-**From a total of 131 chronic musculoskeletal pain management in elderly patient those registered at Shambu General Hospital from May 1,2018 to Jul30,2018,of these 82(62.6%)were male and 49(37.4%)were female.This study shows that male were more affected with chronic musculoskeletal pain 82(62.6%)than female 49(37.4%)among this with gout arthritis 26(86.6%)were male and 4(13.3%)were female ,Rheumatoid arthritis 46(58.9%)were male and 32(41.1%)were female where as with low back pain 10(43.5%)were male and 13(56.5%)were female. **Conclusion and Recommendation:-** This study shows, from chronic musculoskeletal pain, Rheumatoid arthritis was more prevalent78(59.5%) when compared with other type of chronic musculoskeletal pain in elderly while, low back pain is the least10(43.5%) and gout arthritis30(22.90%) have moderate prevalence and chronic musculoskeletal pain was more prevalent in male elderly patient82(62.6%)when compared with female elderly patient 49(37.4%) as indicated from patient chart which were recorded from May 1,2018 to Jul30,2018 at Shambu General Hospital. Since treating elderly patient need great precaution regarding drug metabolism and excretion so prior to prescribing NSAID, Steroid and other anti pain to treat Chronic MSK pain management in elderly, pertinent lab finding such as Liver function test, Renal function test are essential.

KEYWORDS: Shambu General Hospital, Pain Management, Chronic Musculoskeletal, Elderly Patients Rheumatoid arthritis.

1. INTRODUCTION

1.1. Back ground

Chronic musculoskeletal pain conditions are a major burden on individuals, health systems, and social care systems, with indirect costs being predominant. This burden has been recognized by the United Nations and WHO, by endorsing the Bone and Joint Decade 2000–

2010. The four major musculoskeletal conditions: Gout arthritis, rheumatoid arthritis and low back pain. Rheumatoid arthritis, which is characterized by loss of joint cartilage that leads to pain and loss of function primarily in the knees and hips, affects 9.6% of men and 18% of women aged >60 years. Increases in life expectancy and ageing populations are expected to make

Rheumatoid arthritis the fourth leading cause of disability by the year 2020.^[1,2,3,4]

In case of chronic non-cancer pain (involves musculoskeletal condition such as arthritis has been described as a “disease “concept rather than series of symptoms. The use of oral medication in the treatment of chronic musculoskeletal pain in the elderly requires careful selection of drugs to control pain with consideration for both the physiological state and the presence of disease(s). Recent advances have improved the understanding of bimolecular mechanisms of chronic pain. These include the production of powerful pro-inflammatory cytokines by glial and microglia cells, which then lead to activation of major pain pathways from the periphery through the dorsal horn and supra-spinal pathways to the somatosensory and other higher cortical centers. This has allowed better recognition for intervention with anti-inflammatory agents to control cytokine production (e. g. prednisolone, triamcinolone and other brain-penetrating corticosteroids). Advances in understanding of chronic pain have lead to recognition of neuronal PX2 purinergic receptors as potential sites for drugs to control pain by more selective actions.

Cardio-renal effects have been attributed to some anti pain (e. g. diclofenac), but not all (e. g. naproxen) conventional NSAIDs. Here we make recommendations for a selection of certain NSAIDs to be used for pain therapy in the elderly in consideration of their relative safety and pharmacokinetics. While newer formulations of narcotics have given some advance in pain control, the application of this group of drugs requires close supervision in the elderly, especially those with cognitive decline, since drug actions on the central and peripheral nervous systems can result in significant adverse effects of these agents (e. g. constipation, drowsiness, respiratory and cardiovascular decline).^[5,6,7,8]

1.2. Statement of the Problem

Musculoskeletal (MSK) pain is one of the leading causes of chronic health problems in people over 65 years of age. Studies suggest that a high prevalence of older adults suffer from MSK pain (65% to 80%).^[12]

The prevalence of pain in the elderly is not accurately known, some studies suggest that older adults have an even higher prevalence of MSK pain, between 65%–85% with 36% to 70% reportedly suffer from a back pain, Rheumatoid arthritis and gout arthritis condition.^[13,14]

Authors evaluated quality indicators for chronic pain in a random sample of 372 older community dwelling patients using medical record review and interviews. They concluded that chronic pain management in older vulnerable patients is inadequate and that improvement is needed in screening, clinical evaluation, follow up and attention to potential toxicities of therapy.^[15]

As my knowledge currently there was no adequate study that was done on assessment of chronic musculoskeletal pain management in elderly patient in Ethiopia so that this study will help for members of Shambu General Hospital to know the magnitude and prevalence of the chronic musculoskeletal pain in elderly patient. Despite the essential role of ant pain in reducing chronic musculoskeletal pain, it remain cause of complication and permanent physical disability in elderly people. Preventing elders from developing chronic musculoskeletal pain in the first is critical to reducing its physical disability. But once an elder develops chronic musculoskeletal pain a care giver must recognize the symptom and seek appropriate management.

1.3. Literature Review

Musculoskeletal pain is common, frequently under-reported, and inadequately treated in the older adult. They are the most common cause of severe long-term pain and physical disability, and they affect hundreds of millions of people around the world. They significantly affect the psychosocial status of affected people as well as their families and careers and conditions are a major burden on individuals, health systems, and social care systems, with indirect costs being predominant. The burden has been recognized by the United Nations and WHO, by endorsing the Bone and Joint Decade 2000–2010.^[1]

The four major musculoskeletal conditions are Gout arthritis, rheumatoid arthritis, osteoporosis, and low back pain. Rheumatoid arthritis, which is characterized by loss of joint cartilage that leads to pain and loss of function primarily in the knees and hips, affects 9.6% of men and 18% of women aged >60 years.^[1,2] Increases in life expectancy and ageing populations are expected to make osteoarthritis the fourth leading cause of disability by the year 2020.^[1]

Osteoarthritis is an inflammatory condition that usually affects multiple joints. It affects 0.3– 1.0% of the general population and is more prevalent among women and in developed countries. Persistent inflammation leads to joint destruction, but the disease can be controlled with drugs. The incidence may be on the decline, but the increase in the number of older people in some regions makes it difficult to estimate future prevalence. Osteoporosis, which is characterized by low bone mass and micro architectural deterioration, is a major risk factor for fractures of the hip, vertebrae, and distal forearm. Hip fracture is the most detrimental fracture, being associated with 20% mortality and 50% permanent loss in function. Low back pain is the most prevalent of musculoskeletal conditions; it affects nearly everyone at some point in time and about 4–33% of the population.^[1,5,8]

2. OBJECTIVE

2.1. General objective

To assess chronic musculoskeletal pain management in elderly patient at Shambu General Hospital.

2.2. Specific Objectives

- To determine the prevalence of chronic musculoskeletal pain among elderly patient in these hospital between May1, 2018 and July 30, 2018.
- To assess appropriateness of anti pain therapy in these patient.
- To describe the prescription pattern of anti pain drugs in these patient.

3. METHODOLOGY

1. Study setting

This study was conducted in Shambu General Hospital, Horro Guduru Wollega Zone, Oromia Region, West Ethiopia which is located 315 km from capital city of Ethiopia (Addis Ababa).

Shambu General Hospital has different department and wards like OPD, Medical ward, Gynecology and obstetrics pediatrics ward, and surgical ward .It delivers diversified health service including major operation, minor operation, emergency service, Eye clinic Dental clinic, MCH, ART Clinic, Psychiatric clinic, lab. X-ray/sound and follow up of chronic disease like DM, Hypertension, Heart Failure, Renal Failure, Hepatic Failure, TB, HIV/AIDS. The hospital possess out patient, in patient DM patient, Emergency patient and Other services such as training for low & mid level professionals, food services for admitted patient.

Currently Shambu General Hospital has 78 beds used for the inpatient services, as to the human resource there are total number of 218 workers 141 health professionals and 77 administrative staffs, according to the regulation and directives of the health care financing of the oromia region the hospital has been governed by the Governing board since 2007, composition of the members were from different sectors; including community representative. The average annually out-patient visit are 96000-120000. [The information is obtained from human resource and management department of Shambu General Hospital].

3.2. Study design and Period

A cross sectional study involving patient chart review was conducted to assess chronic musculoskeletal pain management in Shambu General Hospital from May1, 2018 to July 30,2018.

3.3. Population

3.3.1. Source population

The source of population of the study was all elderly patients of Shambu General Hospital with chronic musculoskeletal pain disorder.

3.3.2. Study population

The study population for this study was all patient who attended in Shambu General Hospital out patient department and managed for their chronic musculoskeletal pain from May 1,2018 to July 30- 2018.

3.4. Inclusion and Exclusion criteria

3.4.1. Inclusion criteria

- All patient >65 years old those registered for management of chronic musculoskeletal pain.
- Those who were registered between May 1,2018 to July 30- 2018.

3.4.2. Exclusion criteria

- All patient those age was <65 years old.
- Those patients who were admitted in inpatient ward at the time of data collection.
- Those patient who were with chronic musculoskeletal malignant pain.
- Those patients with post operative pain.

3.4. Sample size and sampling techniques.

The minimum sample size was estimated by the single population formula.

$$ni = z^2p(1-p)/d^2$$

Where; Z=confidence level P=estimate of the population d=margin of error.

When: $Z=1.96$, $P= 0.5$ and $d= 0.05$

$$ni = 1.96^2 (0.5)(1 - 0.5)/(0.05)^2 = 384.16 \approx 384$$

But; From the patient chart the total number of chronic musculoskeletal pain patients at NRH during the six months of the study period total number of population (Nt)were 200 Since the N total is less than 10,000,the minimum final sample size was calculated By using the adjustment reduction formula:

$$nf = ni = \frac{ni}{1 + \frac{ni}{N}} \quad nf = \frac{384}{1 + \frac{384}{200}} = 131$$

The samples were drawn by using systematic random sampling method. The Kth formula; $K=sp/ss$.

3.5. Study variable

3.5.1 Independent Variables

- Sex, and age, chronic musculoskeletal pain.

3.5.2. Dependent variable

- Incidence of chronic musculoskeletal pain.
- All patient registered for treatment of chronic musculoskeletal pain.

3.6. Data collection process

Data was collected by a nurses through retrospective by using semi structured questionnaires among elderly patients' chart those above 65 years old who were

registered for management of chronic musculoskeletal pain in outpatient department in SHGH from May 1, 2018 to July 30- 2018. The clarity and completeness checkup of collected data was under taken after the actual data collection and data clearing was conducted.

3.7. Data Analysis

Text, graph, chart and table was used to summarize the collected assessment of chronic musculoskeletal pain management.

Finally, it was interpreted using standard cooperated with other similar finding.

3.8. Operational definition

- **Low back pain** – Pain localized below the line of twelfth rib and above the inferior gluteal folds.^[18]
- **Rheumatoid arthritis** – is inflammatory condition with wide spread synovial joint involvement.^[19]
- **Pain**- is an unpleasant sensation that can range from mild localized discomfort to agony.^[20]
- **Gout arthritis** - is inflammatory condition of joint which caused by accumulation of uric acid in joint.^[20]

3.9. Ethical Consideration

The data collection will be performed after legal permission letter obtained from Wollega University to Shambu General Hospital. The study findings was performed from the patient charts who are at targete. The confidentiality of patient will be kept by avoiding writing of patient name when data collected.

3.10. Limitation of the Study

- Incompleteness of information on patient chart.
- Lack of similar studies in Ethiopia.
- Lack of appropriate documentation of patient chart.

3.11. Dissemination of the Result

The result of this study will be disseminated to the department of pharmacy and college of medical science as well as, Shambu General Hospital and Oromia health Bureau and any of those who needs it as a source of information and as reference.

4. RESULT

4.1. Socio-Demographic Characteristics

From a total of 131 chronic musculoskeletal pain management in elderly patient those registered at Shambu General Hospital from May 1,2018 to July 30, 2018, of these 82(62.6%)were male and 49(37.4%) were female. This study shows that male were more affected with chronic musculoskeletal pain 82(62.6%) than female 49(37.4%) among this with gout arthritis 26(86.6%) were male and 4(13.3%) were female, Rheumatoid arthritis 46(58.9%)were male and 32(41.1%) were female where as with low back pain 10(43.5%) were male and 13(56.5%)were female.

Table 1: Socio-demographic characteristics of chronic musculoskeletal pain management by age and sex from May 1, 2018-July 30, 2018 at Shambu General Hospital.

Characteristics	Frequency	Percent	
Sex	Male	82	62.6
	Female	49	37.4
Age group	65-75	98	74.8
	76-85	24	18.3
	≥86	9	6.9

4.2. Prevalence of Chronic Musculoskeletal Pain

Among 131 with chronic musculoskeletal pain the most prevalent was Rheumatoid arthritis 78(59.5%), gout arthritis 30(22.90%) have moderate prevalence and low back pain 23(17.6%) was the least prevalent. Rheumatoid arthritis 46(58.9%) were male and 32(41.1%) were female where as with low back pain 10(43.5%) were male and 13(56.5%) were female.

The detailed was described in graph below:

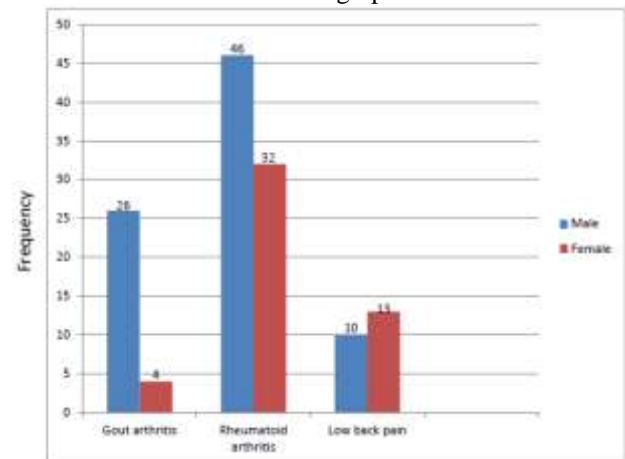


Fig. 1: Prevalency of chronic musculoskeletal pain management from May 1, 2018-July 30,2018 at Shambu General Hospital.

4.3. Management of chronic musculoskeletal pain

Among 131 patient 30(22.90%) have gout arthritis, of these 10(33.3%) were treated with diclofenac IM minimum of 03 days and maximum of 05 days and Amitriptyline po for 2weeks duration of treatment, 15(50%)were treated by Indomethacin po for 14days duration of treatment and 5(16.7%)were treated with Tramadol IM for 5 days and prednisolone po by tapering dose for minimum of of 10 days and maximum of 15 days duration of treatment.

The detailed was described in graph below:

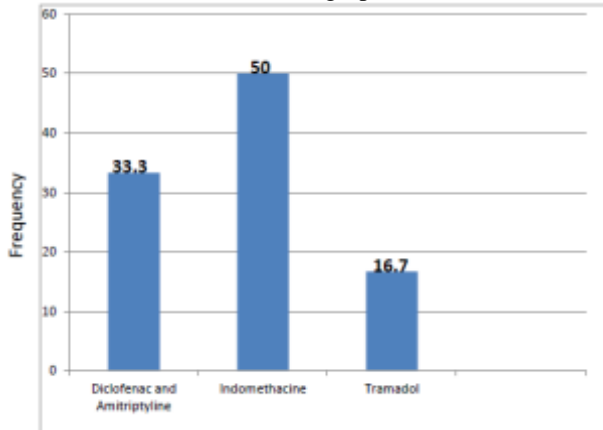


Fig 2: Drug therapy for Gout arthritis from May 1, 2018 to July 30, 2018 at Shambu General Hospital.

Out of 131 registered patients 78(59.5%) have Rheumatoid arthritis, of these 37(47.4%) were treated with Indomethacin suppositories and po for 10 days and 14 days duration of treatment respectively, 23(29.5%) were treated with Diclofenac IM and Dexamethasone IM concomitantly for minimum of 05 days and maximum of 07 days duration of treatment, 11(14.1%) were treated with Ibuprofen po for minimum of 10 days duration of treatment and maximum of 10 days duration of treatment and 7(8.9%) were treated with Triamcinolone IM stat and Tramadol po for 05 days total duration of treatment

The detailed was explained in graph below:

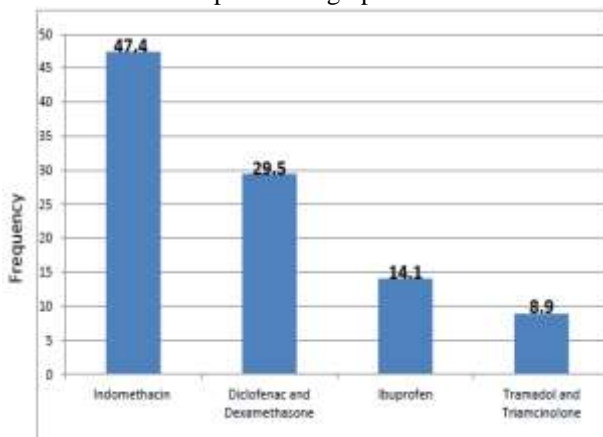


Fig 3: Drug therapy for Rheumatoid arthritis from May 1, 2018 to July 30, 2018 at Shambu General Hospital.

Among 131 patients 23(17.5%) have low back pain, of these 10(43.5%) were treated with Tramadol po for minimum of 05 days and maximum of 10 days total duration of treatment, 7(30.3%) were treated by Indomethacin po for 10-14 days plus Amitriptyline po for 2 weeks total duration of treatment, 4(17.4%) were treated with Diclofenac IM plus Dexamethasone IM for 05 days and 2(8.7%) were treated with Ibuprofen po for minimum of 05 days and maximum of 10 days total duration of treatment.

The detailed was explained in graph below:

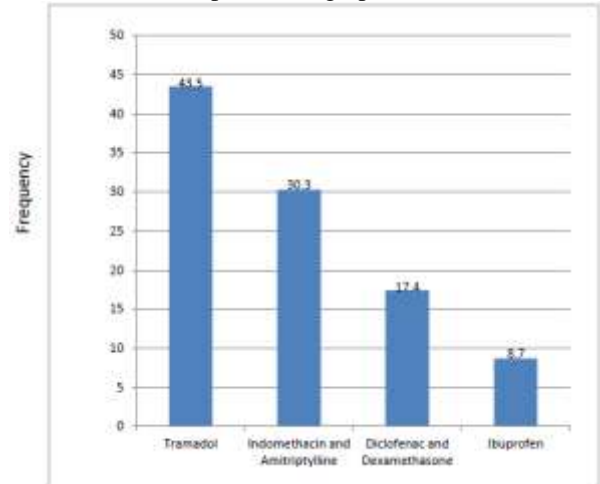


Fig. 4: Drug therapy for low back pain from May 1, 2018 to July 30, 2018 at Shambu General Hospital.

5. DISCUSSION

As American Geriatrics Study Panel shows, the incidence and prevalence of chronic musculoskeletal pain generally rise with increasing age and higher among women.^[16] But the study conducted in Shambu General Hospital from May 1, 2018-July 30, 2018, shows that the prevalence of chronic musculoskeletal pain in elderly was higher among men 82(62.6%) when compared with women 49(37.4%).

World wide estimates are 18% of men 9.6% of female aged greater than 65 Complain of Gout arthritis and study from Netherland shows low back pain and rheumatoid arthritis affect male a little more than women and is most frequent in working population with the highest incidence seen in those ≥ 64 years.^[17]

While the study done in Shambu General Hospital from May 1, 2018-July 30, 2018, shows that, from a total of 131, of these 82(62.6%) were male and 49(37.4%) were female, with an average age of 71.3(65-93) years old. This study shows that male were more affected with chronic musculoskeletal pain 82(62.6%) than female 49(37.4%) among this with gout arthritis 26(86.6%) were male and 4(13.3%) were female. Rheumatoid arthritis 46(58.9%) were male and 32(41.1%) were female where as with low back pain 10(43.5%) were male and 13(56.5%) were female.

Studies shows in Canada, in treatment of gouty arthritis, use of generic nonsteroidal antiinflammatory drugs (NSAIDs), systemic corticosteroid with adjunctive low-dose colchicine (0.6 mg orally twice a day) has been effective. Corticotrophin induced more rapid relief of symptoms with fewer side effects than indomethacin in patients with gouty arthritis.^[21]

But in Shambu General Hospital from May 1, 2018-July 30, 2018 patient with gouty arthritis were treated by Diclofenac, Amitriptyline, indomethacin, Tramadol

and prednisolone as follow. From a total of 131 patient 30(22.90%) have gout arthritis, of these 10(33.3%) were treated with diclofenac IM minimum of 03 days and maximum of 05 days and amitriptyline po for 2 weeks duration of treatment, 15(50%) were treated by Indomethacin po for 14 days duration of treatment and 5(16.7%) were treated with Tramadol IM for 5 days and prednisolone po by tapering dose for minimum of 10 days and maximum of 15 days duration of treatment.

As study conducted by Joint Committee of the Medical Research Council of Australia suggested, patients treated with methotrexate have the highest rate of continued long-term therapy, and therefore most rheumatologists consider it the drug of choice. Disease-modifying drugs were effective as combination therapy for rheumatoid arthritis and whether the combinations studied had better efficacy than methotrexate alone. Conventional therapy for rheumatoid arthritis includes the administration of anti-inflammatory drugs, followed by disease-modifying ant rheumatic drugs such as methotrexate, hydroxychloroquine, sulfasalazine, and gold in patients with persistent active disease.^[22]

But in this study due to methotrexate is not available in Shambu General Hospital most of the patient with rheumatoid arthritis were treated with NSAIDs, steroid and opioids drugs as follow; from a total of 131 registered patients 78(59.5%) have Rheumatoid arthritis, of these 37(47.4%) were treated with Indomethacin suppositories and Po for 10 days and 14 days duration of treatment respectively, 23(29.5%) were treated with Diclofenac IM and Dexamethasone IM concomitantly for minimum of 05 days and maximum of 07 days duration of treatment, 11(14.1%) were treated with Ibuprofen po for minimum of 10 days duration of treatment and maximum of 10 days duration of treatment and 7(8.9%) were treated with Triamcinolone IM stat and Tramadol Po for 05 days duration of treatment.

6. CONCLUSION AND RECOMMENDATION

6.1. Conclusion

This study shows, from chronic musculoskeletal pain, Rheumatoid arthritis was more prevalent 78(59.5%) when compared with other type of chronic musculoskeletal pain in elderly while, low back pain is the least 10(43.5%) and gout arthritis 30(22.90%) have moderate prevalence and chronic musculoskeletal pain was more prevalent in male elderly patient 82(62.6%) when compared with female elderly patient 49(37.4%) as indicated from patient chart which were recorded in Shambu General Hospital from May 1, 2018-July 30, 2018.

The common drug prescribed for management of chronic musculoskeletal pain were NSAIDs, steroids, TCA and Opioids. Out of these the top prescribed drug used for management of Rheumatoid arthritis was Indomethacin 37(47.4%), for gout arthritis Diclofenac plus Amitriptyline 10(33.3%) and for low back pain tramadol

10(43.5%). While the least drug used for management of rheumatoid arthritis was Tramadol plus triamcinolone 7(8.9%), for gout arthritis tramadol 5(16.7%) and for low back pain Ibuprofen 2(8.7%).

So, the management of chronic musculoskeletal pain in elderly patient at Shambu General Hospital from May 1, 2018-July 30, 2018 was sub-optimal.

6.2. Recommendation

During this study was conducted from patient chart there were no full history taking such as chief complaint, physical examination and etc. On many patient's chart only diagnosis were written without writing even single word of patient chief complaint. So this study area (Shambu General Hospital) should take full history prior to diagnose chronic musculoskeletal pain in elderly patient and also the health professionals in Shambu General Hospital able to describe grade of pain to manage pain depending on its severity accordingly. Oromia Regional Health Beraue Should allocate resources and support by giving on job training for Shambu General Hospital Health Professionals on how to manage patients with chronic musculoskeletal disorders. Shambu General Hospital Should have adequate resources to avail essential medicines to treat Patients with Chronic Musculoskeletal disorders.

Since treating elderly patient need great precaution regarding drug metabolism and excretion so prior to prescribing NSAID, Steroid and other anti-pain to treat Chronic MSK pain management in elderly, pertinent lab finding such as Liver function test, Renal function test are essential.

The Physicians in Shambu General Hospital and Clinical Pharmacists in Shambu General Hospital should work together to minimize drug related problem in the management of Chronic Musculoskeletal disorders.

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