International Journal of Research in Orthopaedics
Alelaumi AF et al. Int J Res Orthop. 2026 Jul;12(4):1044-1048
https://www.ijoro.org

Original Research Article

DOI: https://dx.doi.org/10.18203/issn.2455-4510.IntJResOrthop20262037

Patterns of musculoskeletal complaints in family medicine clinics at a tertiary center in Jordan

Ahmad Fuad Alelaumi[1]*, Ahmad Alameer[2], Hussain Ahmad Alsaffar[2], Mariam Ali Ashkanani[2], Mahmoud Dashti[2], Bader Almutairi[2]

[1]Department of Orthopedic Surgery, Jordan University Hospital, Amman, Jordan
[2]University of Jordan, School of Medicine, Amman, Jordan

Received: 04 April 2026
Accepted: 16 May 2026

***Correspondence:**
Dr. Ahmad Fuad Alelaumi,
E-mail: ahmadfouad999@gmail.com

ABSTRACT

Background: Musculoskeletal (MSK) complaints are commonly encountered in family medicine clinics. They represent a frequent cause of pain, functional limitation, and healthcare visits. Understanding their clinical patterns in primary care is important for improving management and resource planning.
Methods: This cross-sectional descriptive study was conducted at Jordan University Hospital from January to December 2025. A total of 100 adult patients presenting with MSK complaints were included. Data were collected through patient interviews and medical records. Variables included demographic characteristics, comorbidities, anatomical site of pain, pain severity, functional status, and disability. Only descriptive statistical analysis performed.
Results: The mean age was 44.8±14.6 years, and 60% of patients were female. Low back pain was the most common complaint (26%), followed by knee pain (22%) and shoulder pain (14%). The mean pain score was 6.9±1.8. Mean functional status score was 6.8±2.1, and the mean disability score was 5.9±2.3. Females reported higher pain scores, while males showed higher disability levels. Comorbidities such as hypertension (24%) and diabetes (20%) were common.
Conclusions: MSK complaints in primary care commonly involve the lower back, knee, and shoulder. Patients present with moderate to high pain levels and varying degrees of functional limitation. These findings provide a clear overview of MSK presentations in family medicine clinics in Jordan and may support improvements in clinical practice.

Keywords: Musculoskeletal complaints, Primary care, Family medicine, Pain severity, Functional status, Disability, Clinical patterns, Cross-sectional study, Jordan

INTRODUCTION

Musculoskeletal (MSK) disorders are among the most common health problems worldwide.[1] They affect the muscles, bones, joints, ligaments, and surrounding soft tissues. Patients often present with pain, stiffness, and reduced mobility.[2] These symptoms can limit daily activities and affect overall quality of life.[3] MSK conditions are also a major cause of disability and are associated with repeated healthcare visits. As a result, they place a significant burden on both patients and healthcare systems.[4,5]

Family medicine clinics are usually the first point of contact for patients with MSK complaints. In this setting, physicians manage a wide range of conditions, from simple mechanical pain to more complex or chronic disorders.[6,7]

They are responsible for taking history, performing physical examination, and initiating appropriate management. In addition, they must decide when further investigations or specialist referrals are required. This makes primary care an essential part of the overall management of MSK conditions.[8]

The pattern of MSK complaints seen in primary care reflects real-world clinical practice. Understanding these patterns is important for improving patient care.[9,10] It helps identify the most common conditions and guides clinical decision-making. It also supports better planning of healthcare resources and services.[11] Furthermore, such data can be useful in improving training programs for medical students and primary care physicians.[12]

In Jordan and similar healthcare settings, MSK complaints are frequently encountered in family medicine clinics.[6] However, there is limited data describing their clinical patterns in these settings. Most available studies focus on specific conditions, such as low back pain or osteoarthritis, or are conducted in specialized orthopedic clinics. These studies do not fully reflect the variety of MSK complaints seen in primary care. Therefore, there is a need for studies that provide a broader overview of MSK presentations in family medicine clinics.

Patient characteristics may also influence the presentation of MSK complaints. Factors such as age, sex, body mass index, and comorbidities like diabetes or hypertension may affect both the type and severity of symptoms.[13,14] Lifestyle factors, such as smoking and physical activity, may also play a role.[15,16] Evaluating these factors can help in understanding the patient population and identifying common patterns in clinical presentation.

The aim of this study is to describe the patterns and clinical characteristics of MSK complaints among adult patients presenting to family medicine clinics at a tertiary center in Jordan. This study focuses on the distribution of pain sites, patient demographic and clinical characteristics, and measures of pain severity and functional status. The findings are expected to provide a clear overview of MSK presentations in a primary care setting and support improvements in clinical practice.

METHODS

Study design and setting

This study is a cross-sectional descriptive study conducted at the family medicine clinics of Jordan University Hospital. The hospital is a tertiary care center that serves a large and diverse patient population. The study was carried out over a 12-month period, from January 2025 to December 2025.

Study population

A total of 100 patients were included in this study. Participants were adult patients aged 18 years or older who presented to the family medicine clinics with musculoskeletal (MSK) complaints during the study period. MSK complaints were defined as conditions affecting the muscles, bones, joints, ligaments, or soft tissues, presenting with symptoms such as pain, stiffness, or reduced function.

Inclusion and exclusion criteria

Patients were included if they had a primary complaint related to the musculoskeletal system and were able to provide informed consent. Patients with non-musculoskeletal complaints were excluded. In addition, patients with severe trauma requiring emergency care, recent orthopedic surgery, or cognitive impairment were excluded. Patients with severe medical conditions that could interfere with participation were also excluded.

Data collection

Data were collected using a structured data collection form. Information was obtained through direct patient interviews and review of electronic medical records. Data collection was performed with the assistance of family medicine residents. All data were recorded during the clinic visit.

The collected data included demographic variables such as age, sex, and body mass index (BMI). Clinical variables included medical comorbidities such as hypertension, diabetes mellitus, and smoking status. The main musculoskeletal complaint was recorded and classified according to the anatomical site, including low back, knee, shoulder, neck, and other regions.

Pain severity was assessed using a numerical rating scale from 0 to 10, where 0 indicates no pain and 10 indicates the worst possible pain. Functional status was assessed using a similar scale based on the patient's ability to perform daily activities. Disability related to the current condition was also recorded.

Study variables

The main variables of interest were the distribution of musculoskeletal complaints by anatomical site, patient demographic characteristics, and measures of pain severity, functional status, and disability. Comorbidities and lifestyle factors were included to describe the clinical profile of the patients.

Ethical considerations

Ethical approval was obtained from the institutional review board of Jordan University Hospital. Informed consent was obtained from all participants before inclusion. Patient confidentiality was maintained by anonymizing all collected data.

Statistical analysis

Data were entered and analyzed using the statistical package for social sciences (SPSS) version 20. Only descriptive statistical analysis was performed. Continuous variables were presented as mean and standard deviation or median and interquartile range, as appropriate. Categorical variables were presented as frequencies and

percentages. No inferential statistical tests were performed, as the aim of the study was purely descriptive.

RESULTS

A total of 100 patients were included in this study. The mean age was 44.8±14.6 years, ranging from 18 to 78 years. Female patients represented 60% of the sample, while males accounted for 40%. The mean body mass index (BMI) was 27.2±4.3 kg/m². Regarding smoking status, 32 patients (32%) were smokers and 68 patients (68%) were non-smokers. Hypertension was present in 24 patients (24%), diabetes mellitus in 20 patients (20%), and cardiovascular disease in 9 patients (9%). Respiratory diseases were reported in 6 patients (6%), and other endocrine diseases were present in 8 patients (8%) (Table 1).

Table 1: Demographic and clinical characteristics of the study population (n=100).

Variables	Value
Age (in years), mean±SD	44.8±14.6
BMI (kg/m²), mean±SD	27.2±4.3
Male	40 (40%)
Female	60 (60%)
Smoker	32 (32%)
Non-smoker	68 (68%)
Hypertension	24 (24%)
Diabetes mellitus	20 (20%)
Cardiovascular disease	9 (9%)
Respiratory diseases	6 (6%)
Endocrine diseases (non-DM)	8 (8%)

The distribution of musculoskeletal complaints showed variation across anatomical sites. Low back pain was the most commonly reported complaint, accounting for 26 patients (26%). Knee pain was reported in 22 patients (22%), followed by shoulder pain in 14 patients (14%). Foot and ankle pain was reported in 12 patients (12%), while neck pain was present in 10 patients (10%). Wrist and hand pain accounted for 8 patients (8%), and elbow pain was also reported in 8 patients (8%). Distribution of complaints by anatomical site is presented in Table 2.

Table 2: Distribution of musculoskeletal complaints by anatomical site (n=100).

Complaints	N
Low back pain	26 (26%)
Knee pain	22 (22%)
Shoulder pain	14 (14%)
Foot and ankle pain	12 (12%)
Neck pain	10 (10%)
Wrist/hand pain	8 (8%)
Elbow pain	8 (8%)

Pain severity was assessed using a numerical rating scale. The mean pain score for the study population was 6.9±1.8. A total of 20 patients (20%) reported mild pain (score ≤5), 48 patients (48%) reported moderate pain (scores 6-8), and 32 patients (32%) reported severe pain (scores 9-10). The distribution of pain severity is shown in Table 3.

Table 3: Pain severity distribution, (n=100).

Pain category	N
Mild (≤5)	20 (20%)
Moderate (6-8)	48 (48%)
Severe (9-10)	32 (32%)
Mean pain	6.9±1.8

Functional status was assessed based on patient-reported ability to perform daily activities. The mean functional status score was 6.8±2.1. A total of 42 patients (42%) reported good functional status (scores 8-10), 38 patients (38%) reported moderate functional status (scores 5-7), and 20 patients (20%) reported poor functional status (scores ≤4). Disability related to the current musculoskeletal complaint was also evaluated. The mean disability score was 5.9±2.3. High disability (scores ≥7) was reported in 36 patients (36%), moderate disability (scores 4-6) in 44 patients (44%), and low disability (scores ≤3) in 20 patients (20%) (Table 4).

Table 4: Functional status and disability scores (n=100).

Variables	N
Good functional status (8-10)	42 (42%)
Moderate functional status (5-7)	38 (38%)
Poor functional status (≤4)	20 (20%)
High disability (≥7)	36 (36%)
Moderate disability (4-6)	44 (44%)
Low disability (≤3)	20 (20%)
Mean functional score±SD	6.8±2.1
Mean disability score±SD	5.9±2.3

Table 5: Sex-based distribution of complaints and clinical measures (n=100).

Variables	Male (n=40)	Female (n=60)
Low back pain	8 (20%)	18 (30%)
Knee pain	10 (25%)	12 (20%)
Shoulder pain	5 (12.5%)	9 (15%)
Foot and ankle pain	5 (12.5%)	7 (11.7%)
Mean pain	6.4±1.7	7.2±1.8
Mean functional	6.3±2.0	7.1±2.1
Mean disability	6.5±2.2	5.5±2.3

Sex-based distribution of musculoskeletal complaints and clinical measures showed some variation. Among males, low back pain was reported in 8 patients (20%) and knee pain in 10 patients (25%). Among females, low back pain was reported in 18 patients (30%) and knee pain in 12 patients (20%). Shoulder pain was reported in 5 males (12.5%) and 9 females (15%). Foot and ankle pain was

reported in 5 males (12.5%) and 7 females (11.7%). The mean pain score was 6.4±1.7 in males and 7.2±1.8 in females. The mean functional status score was 6.3±2.0 in males and 7.1±2.1 in females. Mean disability score was 6.5±2.2 in males and 5.5±2.3 in females (Table 5).

DISCUSSION

This study described the patterns and clinical characteristics of MSK complaints among patients attending family medicine clinics in Jordan. The findings showed that MSK complaints are common across a wide range of adult patients, with a mean age in the mid-forties and a slight predominance of female patients. The study population also demonstrated a notable presence of common comorbidities such as hypertension and diabetes, which are frequently seen in primary care settings.

Low back pain was the most commonly reported complaint, followed by knee and shoulder pain. This pattern is consistent with previous studies, where low back pain is often reported as the leading cause of MSK-related visits in primary care.[17,18] Knee pain is also frequently reported, especially in middle-aged and older patients, likely due to degenerative conditions.[19] Shoulder pain, although less common than back and knee pain, remains a frequent reason for consultation and may reflect both acute and chronic conditions.[20]

The mean pain score in this study indicated moderate to high pain levels among patients. A large proportion of patients reported moderate or severe pain at the time of presentation. This reflects the clinical reality that patients often seek medical care when symptoms become significant. Similar findings have been reported in other studies, where MSK complaints are associated with considerable pain burden at the time of consultation.[21-23]

Functional status and disability scores in this study showed that MSK complaints had a clear impact on daily activities. A substantial proportion of patients reported moderate to high levels of disability. At the same time, a smaller group maintained good functional ability despite the presence of pain. These findings are consistent with the known variability in how patients experience and cope with MSK conditions. Some patients may tolerate symptoms with minimal functional limitation, while others experience significant impairment.[24,25]

Sex-based differences were also observed in this study. Female patients reported slightly higher pain scores and better functional status, while male patients showed higher disability scores. In addition, low back pain was more frequent among females, while knee pain was slightly more common among males. These differences are in line with previous literature, which suggests that MSK conditions may present differently between males and females. Factors such as biological differences, occupational exposure, and health-seeking behavior may contribute to these variations.[26]

The presence of comorbidities such as hypertension and diabetes in a considerable proportion of patients reflects the typical profile of patients seen in family medicine clinics. These conditions may influence both the development and progression of MSK complaints. For example, obesity and metabolic conditions have been linked to increased risk of joint pain and degenerative disorders.[27] Smoking may also contribute to poorer musculoskeletal health and delayed recovery.[28]

The findings of this study highlight the importance of primary care in the management of MSK complaints. Family medicine clinics play a central role in early assessment and initial management. Understanding the common patterns of presentation can help improve clinical practice and guide resource allocation. It also supports the development of targeted training for healthcare providers working in primary care settings.

This study has several strengths. It provides a clear and focused description of MSK complaints in a clinical primary care setting. The use of a structured data collection approach allowed for consistent recording of variables. In addition, the study included multiple clinical dimensions, including pain severity and functional status.

However, there are some limitations. The sample size was relatively small, and the study was conducted in a single center, which may limit generalizability. The use of a convenience sample may also introduce selection bias. In addition, the study relied on patient-reported measures, which may be subject to reporting variation.

CONCLUSION

This study provides a simple and clear overview of the patterns and clinical characteristics of musculoskeletal complaints in family medicine clinics. Low back pain, knee pain, and shoulder pain were the most common presentations. Patients reported moderate to high pain levels, with varying degrees of functional limitation and disability. These findings reflect the burden of MSK conditions in primary care and support the need for continued focus on their management in this setting.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

1. Wáng YXJ, Wáng JQ, Káplár Z. Increased low back pain prevalence in females than in males after menopause age: evidences based on synthetic literature review. Quant Imaging Med Surg. 2016;62(2):199-206.
2. El-Tallawy SN, Nalamasu R, Salem GI, LeQuang JAK, Pergolizzi JV, Christo PJ. Management of Musculoskeletal Pain: An Update with Emphasis on Chronic Musculoskeletal Pain. Pain Ther. 2021;10(1):181.

3. Hildenbrand GM, Perrault EK, Rnoh RHJ. Patients' Perceptions of Health Care Providers' Dismissive Communication. Health Promot Pract. 2022;23(5):777-84.
4. Nguyen A, Lee P, Rodriguez EK, Chahal K, Freedman BR, Nazarian A. Addressing the growing burden of musculoskeletal diseases in the ageing US population: challenges and innovations. Lancet Heal Longev. 2025;6(5):100707.
5. National Academies of Sciences. Musculoskeletal Disorders. Sel Heal Cond Likelihood Improv with Treat, 2020. Available at: https://www.nationalacademies.org/read/25662/chapter/7#285. Accessed on 28 March 2026.
6. Dawod MS, Mohammad NA, Ahmad FA, Jehad FA, Rana JR, Lina K, et al. Evaluation of musculoskeletal complaints, treatment approaches, and patient perceptions in family medicine clinics in a tertiary center in Jordan: a cross-sectional study. BMC Prim Care. 2025;26(1):16.
7. Wu V, Kiyomi G, Stephen C, Michael P, Jason WD, Irvin S, et al. Family Medicine Musculoskeletal Medicine Education: A CERA Study. Fam Med. 2022;54(5):369-75.
8. Khan A, Syed OH, Raminder K, Ahmad H, Abid NKA, Alena B, et al. Primary Care Strategies for Managing Musculoskeletal Pain: A Narrative Overview. Cureus. 2025;17(7):e88447.
9. Fullen BM, Harriet W, An De G, Morten H, McVeigh JG, Martin D, et al. Musculoskeletal Pain: Current and Future Directions of Physical Therapy Practice. Arch Rehabil Res Clin Transl. 2023;5(1):100258.
10. Dziedzic KS, French S, Davis AM, Geelhoed E, Porcheret M. Implementation of musculoskeletal Models of Care in primary care settings: Theory, practice, evaluation and outcomes for musculoskeletal health in high-income economies. Best Pract Res Clin Rheumatol. 2016;30(3):375-97.
11. Lyu G. Data-driven decision making in patient management: a systematic review. BMC Med Inform Decis Mak. 2025;25(1):239.
12. Sutton RT, Pincock D, Baumgart DC, Sadowski DC, Fedorak RN, Kroeker KI. An overview of clinical decision support systems: benefits, risks, and strategies for success. NPJ Digit Med. 2020;3(1):17.
13. Zinabu FS, Gashaw JB, Kassahun C, Kassaw BS, Teklehaimanot TH, Molla F, et al. Prevalence and associated factors of musculoskeletal disorders among older adults living in Bahir Dar City Ethiopia cross-sectional study. Sci Rep. 2025;151(1):37141.
14. Sözen T, Özışık L, Başaran NC. An overview and management of osteoporosis. Eur J Rheumatol. 2017;4(1):46.
15. Cole DC, Rivilis I. Individual factors and musculoskeletal disorders: A framework for their consideration. J Electromyogr Kinesiol. 2004;14(1):121-7.
16. Haas R, Alexandra G, Ljoudmila B, O'Connor D, Pearce C, Mazza D, et al. Prevalence and characteristics of musculoskeletal complaints in primary care: an analysis from the population level and analysis reporting (POLAR) database. BMC Prim Care. 2023;24(1):1-10.
17. Rezaei B, Mousavi E, Heshmati B, Asadi S. Low back pain and its related risk factors in health care providers at hospitals: A systematic review. Ann Med Surg. 2021;70:102903.
18. Duarte ST, Alexandre M, Daniela C, Helena D, Bruno H, Pedro A, et al. Low back pain management in primary healthcare: findings from a scoping review on models of care. BMJ Open. 2024;14(5):e079276.
19. Axford J, Heron C, Ross F, Victor CR. Management of knee osteoarthritis in primary care: Pain and depression are the major obstacles. J Psychosom Res. 2008;64(5):461-7.
20. Rhon DI, Horn ME, Lee HJ, Morton-Oswald S, George SZ. Treatment variability for shoulder pain between physician and non-physician clinicians based on initial setting and specific shoulder diagnosis: a health system analysis. BMC Health Serv Res. 2025;25(1):1370.
21. Smith E, et al. The global burden of other musculoskeletal disorders: Estimates from the Global Burden of Disease 2010 study. Ann Rheum Dis. 2014;73(8):1462-9.
22. Hagen KB, Bjørndal A, Uhlig T, Kvien TK. A population study of factors associated with general practitioner consultation for non-inflammatory musculoskeletal pain. Ann Rheum Dis. 2000;59(10):788-93.
23. Antonopoulou M, Antonakis N, Hadjipavlou A, Lionis C. Patterns of pain and consulting behaviour in patients with musculoskeletal disorders in rural Crete, Greece. Fam Pract. 2007;24(3):209-16.
24. Ferreira-Valente A, Queiroz-Garcia I, Pais-Ribeiro J, Jensen MP. Pain Diagnosis, Pain Coping, and Function in Individuals with Chronic Musculoskeletal Pain. J Pain Res. 2020;13:783-94.
25. Cieza A, Bostan C, Oberhauser C, Bickenbach JE. Explaining functioning outcomes across musculoskeletal conditions: a multilevel modelling approach. Disabil Rehabil. 2010;32(1):85-93.
26. Overstreet DS, Larissa JS, Mackensie J, Indonesia AJ, Joanna MH, Michael AO, et al. A Brief Overview: Sex Differences in Prevalent Chronic Musculoskeletal Conditions. Int J Environ Res Public Health. 2023;20(5):4521.
27. Okifuji A, Hare BD. The association between chronic pain and obesity. J Pain Res. 2015;8:399.
28. Al-Bashaireh Am, Haddad LG, Weaver M, Kelly DL, Chengguo X, Yoon S. The Effect of Tobacco Smoking on Musculoskeletal Health: A Systematic Review. J Environ Public Health. 2018;4184190.

Cite this article as: Alelaumi AF, Alameer A, Alsaffar HA, Ashkanani MA, Dashti M, Almutairi B. Patterns of musculoskeletal complaints in family medicine clinics at a tertiary center in Jordan. Int J Res Orthop 2026;12:1044-8.