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Factors associated with delayed presentation of musculoskeletal complaints in primary care clinics in Jordan

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ABSTRACT

Background: Musculoskeletal (MSK) complaints are common in primary care clinics. Delayed presentation may worsen symptoms and reduce quality of life. Limited data are available from Jordan regarding delayed presentation among patients with MSK complaints. This study aims to evaluate delayed presentation and describe the characteristics of patients presenting with MSK complaints in primary care in Jordan.
Methods: This cross-sectional study was conducted at the family medicine clinics of Jordan University Hospital. A total of 100 adult patients with MSK complaints were included. Data regarding demographics, symptom duration, healthcare experience, emotional impact, and comorbidities were collected from electronic records and a previously established database. Delayed presentation was defined as presentation more than four weeks after symptom onset.
Results: The mean age was 47.4±5.4 years, and 55% of patients were female. The mean symptom duration before presentation was 4.1±1.8 weeks. Delayed presentation was observed in 49% of patients. Functional limitation was reported in 58% of patients, while 53% reported reduced daily activity. Emotional distress related to symptoms was common, with a mean anxiety/frustration score of 6.6±1.9. Most patients had at least one chronic medical condition.
Conclusions: Delayed presentation among patients with musculoskeletal complaints was common. MSK symptoms were associated with important functional and emotional effects. These findings highlight the importance of early medical consultation and improving musculoskeletal care in primary healthcare settings.

Keywords: Delayed presentation, Family medicine, Jordan, Musculoskeletal complaints, Primary care

INTRODUCTION

Musculoskeletal (MSK) complaints are among the most common reasons for seeking care in primary healthcare settings.[1] They include a wide range of symptoms such as joint pain, back pain, neck pain, muscle pain, stiffness, swelling, and limitation of movement.[2] Although many of these complaints are not life-threatening, they can strongly affect daily activity, work productivity, mobility, sleep, and overall quality of life.[3] Globally, MSK conditions are a major contributor to disability, with low back pain recognized as one of the leading causes of years lived with disability worldwide.[4]

Primary care clinics are usually the first point of contact for patients with MSK symptoms. This makes family physicians important in early assessment, initial treatment, patient education, and referral when needed.[5] Early presentation may help identify serious conditions, start appropriate conservative treatment, reduce unnecessary medication use, and prevent progression into chronic pain or functional limitation.[6] However, many patients do not seek medical care early. Some may think that the pain is

temporary, while others may depend on self-medication, home remedies, advice from relatives, or traditional treatments before consulting a doctor.[7]

Delayed presentation is an important issue in MSK care. When patients present late, symptoms may become more persistent and difficult to treat.[8] Delayed consultation may also increase the chance of repeated analgesic use without medical supervision, delayed diagnosis, and unnecessary disability.[9] In primary care, this delay can make the clinical encounter more complex, especially when pain has already become chronic or associated with anxiety, frustration, or reduced function. Therefore, understanding why patients delay seeking care is useful for both clinicians and health planners.

Several factors may influence the timing of presentation. These include age, sex, educational level, occupation, socioeconomic status, pain severity, functional limitation, access to appointments, previous healthcare experiences, and personal beliefs about pain.[10] In some communities, patients may also delay consultation because they normalize MSK pain as part of aging, physical work, or daily stress. Others may seek care only when pain interferes with walking, work, prayer, sleep, or household duties.[11] These factors may differ between countries and healthcare systems, making local data important.

In Jordan, available evidence about MSK complaints in family medicine clinics remains limited. A recent Jordanian study from a tertiary family medicine setting showed that MSK complaints are common and are associated with important differences in symptoms, treatment experiences, and patient perceptions. However, less is known about the timing of presentation and the factors linked to delayed care-seeking among these patients. This represents an important gap, especially in a setting where patients may use over-the-counter medications, traditional remedies, or delayed referral pathways before reaching formal medical care.

The present study was designed to evaluate factors associated with delayed presentation among adult patients with MSK complaints attending family medicine clinics at Jordan University Hospital. The study focused on demographic, clinical, and patient-related factors, including age, sex, educational level, socioeconomic status, symptom duration, smoking status, comorbidities, and patient experience measures. By identifying factors linked to delayed presentation, this study may help improve patient education, encourage earlier consultation, and support better management of MSK complaints in primary care clinics in Jordan.

METHODS

Study design and reporting guidelines

This study was designed as a cross-sectional observational study evaluating factors associated with delayed presentation among adult patients presenting with musculoskeletal (MSK) complaints to family medicine clinics. The manuscript was prepared in accordance with the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) statement for cross-sectional studies to improve methodological transparency and reporting quality. STROBE Initiative.[12]

Study setting

The study was conducted at the family medicine and primary care clinics of Jordan University Hospital, a tertiary academic teaching hospital located in Amman, Jordan. The hospital receives a large number of outpatient visits from different regions of the country and provides multidisciplinary healthcare services, including family medicine, internal medicine, orthopedics, and rehabilitation services. The included patients represented individuals attending family medicine clinics between January and December 2025 for evaluation of MSK-related symptoms.

Study population

The study population consisted of adult patients presenting with musculoskeletal complaints to family medicine clinics during the study period. A total of 100 patients were included in the final analysis. Data were obtained from a previously established database used for evaluating musculoskeletal presentations in primary care settings.

Inclusion criteria

Patients were included if they met all of the following criteria: Age ≥18 years, presentation to family medicine clinics with a primary musculoskeletal complaint, availability of complete demographic and clinical data within the electronic medical record or database system, documentation of symptom duration before presentation.

Exclusion criteria

Patients were excluded if they had incomplete or missing essential clinical data, non-musculoskeletal primary complaints, cognitive impairment or inability to provide reliable information, duplicate records or repeated visits for the same complaint during the study period.

Study variables

The primary outcome of interest was delayed presentation to primary care clinics. For the purpose of this study, delayed presentation was defined as seeking medical care more than four weeks after symptom onset. Patients presenting within four weeks were categorized as early presenters. Collected variables included demographic, clinical, and patient-related factors. Demographic variables included age, sex, body mass index (BMI), smoking status, educational level, and socioeconomic status. Clinical variables included duration of symptoms,

comorbidity burden, and musculoskeletal complaint characteristics. Patient experience measures included perceived ease of scheduling appointments, waiting time acceptability, consultation duration, confidence in managing pain, consultation satisfaction, and emotional responses such as anxiety or frustration related to symptoms.

Data collection

Data were collected retrospectively from the previously established MSK primary care database and the electronic medical record system at Jordan University Hospital. The dataset included standardized information obtained during routine clinical assessment within family medicine clinics. The extracted variables were reviewed for completeness and consistency before analysis. Patient identifiers were removed before statistical processing to maintain confidentiality and anonymity.

Sample size

The study included 100 adult patients with documented musculoskeletal complaints. Since the study was exploratory and based on an available database, all eligible patients meeting the inclusion criteria during the study period were included in the analysis.

Statistical analysis

Statistical analysis was performed using the Statistical Package for the Social Sciences (SPSS) software version 22. Continuous variables were tested for normality using graphical assessment and descriptive distribution measures. Continuous variables were presented as mean ± standard deviation (SD) for normally distributed data. Categorical variables were summarized as frequencies and percentages. The primary analysis focused on identifying demographic and clinical factors associated with delayed presentation, including age, sex, BMI, smoking status, educational level, socioeconomic status, symptom burden, and patient-reported healthcare experience measures.

Ethical considerations

Ethical approval for this study was obtained from the Institutional Review Board (IRB) of Jordan University Hospital prior to data collection and analysis. Patient confidentiality was maintained throughout the study process. All extracted data were anonymized before analysis, and no identifiable patient information was included in the final dataset or manuscript. The study was conducted in accordance with the ethical principles of the Declaration of Helsinki and institutional research regulations.

RESULTS

A total of 100 adult patients presenting with musculoskeletal complaints to the family medicine clinics at Jordan University Hospital were included in the analysis. The mean age of the study population was 47.4±5.4 years, with females representing 55% of the cohort. The mean body mass index (BMI) was 26.0±4.2 kg/m². Most patients had graduate-level education (74%), while 34% were smokers. Regarding socioeconomic status, approximately half of the patients belonged to the average socioeconomic category. Detailed demographic characteristics of the study population are summarized in Table 1.

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

Variable	Value
Age, years (mean±SD)	47.4±5.4
BMI, kg/m² (mean±SD)	26.0±4.2
Sex, N (%)	
Male	45 (45)
Female	55 (55)
Smoking status, N (%)	
Smoker	34 (34)
Non-smoker	66 (66)
Educational level, N (%)	
High-school education	13 (13)
Graduate education	74 (74)
Postgraduate education	13 (13)
Socioeconomic status, N (%)	
Below average	21 (21)
Average	51 (51)
Above average	28 (28)

Musculoskeletal symptoms demonstrated variable duration and presentation patterns. The mean duration of symptoms before presentation was 4.1±1.8 weeks. Nearly half of the patients presented after more than four weeks from symptom onset. Pain was the most frequently reported symptom, while many patients also described limitation of movement, stiffness, and impaired daily activities. Several patients reported persistent symptoms despite attempting self-management strategies before seeking medical care. Detailed clinical and symptom-related characteristics are presented in Table 2.

Patient-reported healthcare experience measures showed moderate overall satisfaction with clinic access and consultation experience. The mean score for ease of scheduling appointments was 6.8±1.8, while waiting time acceptability demonstrated lower scores overall. Consultation duration averaged approximately six minutes. Patients also reported moderate confidence in self-management of their symptoms and moderate consultation satisfaction. Detailed healthcare experience measures are summarized in Table 3.

Musculoskeletal complaints were associated with varying degrees of emotional and functional impact. The mean anxiety or frustration score related to symptoms was 6.6±1.9. More than half of the patients reported reduced

daily activity levels, while a considerable proportion described sleep disturbance, reduced work performance, or difficulty with prolonged standing and walking. Recurrent symptoms were also commonly reported. The emotional and functional burden of musculoskeletal complaints is detailed in Table 4.

Table 2: Clinical characteristics and symptom profile of patients with musculoskeletal complaints.

Variable	Value
Symptom duration, weeks (Mean±SD)	4.1±1.8
Delayed presentation (>4 weeks), N (%)	49 (49)
Early presentation (≤4 weeks), N (%)	51 (51)
Presence of pain, N (%)	100 (100)
Limitation of movement, N (%)	62 (62)
Functional limitation, N (%)	58 (58)
Stiffness-related symptoms, N (%)	41 (41)
Symptoms affecting daily activities, N (%)	53 (53)
Symptoms affecting mobility/walking, N (%)	37 (37)
Persistent symptoms despite self-management, N (%)	44 (44)

Table 3: Patient-reported healthcare experience measures.

Variable	Mean±SD
Ease of scheduling appointment	6.8±1.8
Waiting time acceptability	4.2±1.8
Consultation duration, minutes	6.0±2.1
Consultation met expectations	4.0±1.8
Confidence in managing pain	5.1±2.0
Overall clinic experience satisfaction	5.4±1.9
Perceived physician understanding of symptoms	5.7±1.8
Satisfaction with communication during consultation	5.5±1.9

Table 4: Emotional and functional impact of musculoskeletal complaints.

Variable	Value
Anxiety/frustration score related to symptoms (Mean±SD)	6.6±1.9
Patients reporting moderate-to-severe emotional distress, N (%)	46 (46)
Patients reporting reduced daily activity, N (%)	53 (53)
Patients reporting sleep disturbance related to pain, N (%)	39 (39)
Patients reporting reduced work performance, N (%)	35 (35)
Patients reporting difficulty with prolonged walking or standing, N (%)	37 (37)
Patients reporting recurrent symptoms, N (%)	48 (48)

Comorbidity burden was common among the included patients. The mean comorbidity count was 2.0±0.9 chronic medical conditions per patient. Most patients had at least one chronic disease, while nearly half had two or more chronic medical conditions. Hypertension and diabetes mellitus were among the most commonly documented associated illnesses. Previous healthcare visits for the same complaint and regular medication use were also frequently reported. Detailed comorbidity and associated health-related findings are presented in Table 5.

Table 5: Comorbidity burden and associated health factors.

Variable	Value
Mean comorbidity count, Mean±SD	2.0±0.9
Patients with ≥1 chronic medical condition, N (%)	71 (71)
Patients with ≥2 chronic medical conditions, N (%)	44 (44)
Patients with hypertension, N (%)	32 (32)
Patients with diabetes mellitus, N (%)	27 (27)
Patients with dyslipidemia, N (%)	19 (19)
Patients with previous musculoskeletal complaints, N (%)	42 (42)
Patients using regular medications, N (%)	57 (57)
Patients reporting previous healthcare visits for the same complaint, N (%)	36 (36)

DISCUSSION

This study evaluated delayed presentation among patients with musculoskeletal (MSK) complaints attending primary care clinics at Jordan. The study showed that delayed presentation was common among the included patients. Nearly half of the patients presented after more than four weeks from symptom onset. In addition, many patients reported functional limitation, reduced daily activity, and emotional distress related to their symptoms.

Musculoskeletal complaints are among the most common conditions seen in primary care clinics worldwide. They are an important cause of pain, disability, and reduced quality of life. The findings of this study are similar to previous regional and international studies showing that MSK complaints place a major burden on healthcare systems and outpatient clinics.[13]

One of the important findings in this study was the high frequency of delayed presentation. Several reasons may explain this finding. Some patients may think that musculoskeletal pain is temporary and will improve without medical treatment. Others may use self-medication, home remedies, or traditional treatments before seeking medical advice. In some cases, patients may delay consultation because of work responsibilities, financial concerns, or difficulty accessing healthcare services.

The present study showed that educational level, socioeconomic status, smoking status, and BMI had relatively similar distributions among patients. This may suggest that delayed presentation is influenced by multiple factors rather than one single demographic factor. Healthcare-seeking behavior is usually affected by symptom severity, personal beliefs, cultural background, and previous healthcare experiences.[14]

Patient-reported healthcare experience scores were generally moderate. Most patients reported acceptable appointment scheduling and consultation experiences. However, waiting time satisfaction and consultation expectation scores were lower. This may reflect the busy nature of tertiary outpatient clinics, where physicians often deal with large numbers of patients daily. Limited consultation time may affect communication and patient satisfaction.

The study also showed that musculoskeletal complaints had an important emotional and functional effect on patients. Many patients reported reduced daily activity, sleep disturbance, and emotional frustration. Chronic musculoskeletal pain can affect physical function, mobility, work performance, and psychological well-being. These findings highlight the importance of addressing both physical and emotional aspects during patient evaluation.

Comorbidities were common among the included patients. Many patients had hypertension, diabetes mellitus, or other chronic diseases. Chronic medical conditions may increase physical limitation and may affect pain perception and healthcare utilization.[15] Patients with multiple chronic illnesses may also have more complicated clinical presentations.[16]

The study also has some limitations. First, the study was conducted at a single tertiary center, which may limit generalizability of the findings. Second, the cross-sectional design does not allow establishment of causal relationships. Third, some variables were based on patient-reported information, which may introduce recall bias. Finally, the sample size was relatively small.

Despite these limitations, the study provides useful information regarding delayed presentation among patients with musculoskeletal complaints in Jordanian primary care clinics. Future studies with larger sample sizes and multicenter designs are recommended to further evaluate factors affecting healthcare-seeking behavior and delayed presentation in patients with MSK complaints.

CONCLUSION

Delayed presentation among patients with musculoskeletal complaints was common in this study. Many patients also reported functional limitation and emotional distress related to their symptoms. These findings highlight the importance of patient education, early medical consultation, and improving musculoskeletal care in primary healthcare clinics.

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