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# "EPIDEMIOLOGICAL TRENDS AND BURDEN OF MUSCULOSKELETAL DISORDERS IN A TERTIARY ORTHOPAEDIC OUTPATIENT DEPARTMENT: A CROSS-SECTIONAL ANALYSIS"

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## ABSTRACT

**Background:** Orthopaedic outpatient departments (OPDs) serve as the first point of contact for patients with a wide spectrum of musculoskeletal complaints. Identifying the distribution of illnesses and trauma-related conditions helps guide preventive strategies, health education, and efficient healthcare delivery.

**Methods:** This cross-sectional, observational study was conducted over four months (June to September 2023) in the Orthopaedic OPD of a tertiary care teaching in Gujarat. A total of 350 adult patients (age >18 years), newly presenting to the OPD and meeting the inclusion criteria, were enrolled. Data were collected from prescriptions and clinical records. Demographic details, clinical presentations, and history of trauma were documented and analyzed statistically.

**Results:** Among the 350 participants, males constituted 61.4% (n=215) and females 38.6% (n=135). The highest number of cases was observed in the 18–30 years age group (33.1%), followed by 41–50 years (22.3%). The most common presenting complaint was low back pain (30.3%), followed by osteoarthritis (13.1%) and cervical spondylosis (9.4%). Trauma contributed to 36.8% of cases, predominantly among males (67.1%) and the 18–30 years group (35.7%). Fractures were infrequent due to exclusion of emergency cases.

**Conclusions:** Low back pain remains the leading cause of orthopaedic OPD visits, with a significant proportion of young adults affected by trauma-related musculoskeletal issues. Findings emphasize the need for targeted injury prevention strategies and ergonomic awareness programs, especially among young males.

**Keywords:** Orthopaedic OPD, Low back pain, Trauma, Musculoskeletal disorders, Epidemiology, Young adults

**Introduction:** Orthopaedic outpatient departments (OPDs) in tertiary care hospitals are crucial for the early diagnosis, management, and long-term follow-up of patients suffering from musculoskeletal disorders. These clinics serve as the primary point of access for patients with chronic joint pain, degenerative diseases, trauma, and other orthopaedic conditions. Understanding the pattern of orthopaedic illnesses helps inform healthcare delivery models, infrastructure planning, and the training needs of clinicians[1,2].

Musculoskeletal disorders are one of the leading causes of disability worldwide. According to the Global Burden of Disease Study (2017)[3], low back pain and osteoarthritis are among the top causes of years lived with disability (YLDs). In the context of an orthopaedic OPD, it becomes essential to identify high-frequency ailments and their demographic correlation to tailor specific treatment pathways and preventive strategies[4,5].

The profile of orthopaedic OPD patients reflects a range of disorders, from inflammatory and degenerative conditions to trauma-related injuries. Several studies in the Indian subcontinent and other developing regions have identified spine-related conditions, osteoarthritis, and shoulder pathologies as predominant complaints. For instance, in a study from a tertiary hospital found that spine pain was the most common presenting complaint, followed by osteoarthritis and soft tissue injuries[6-8]. Similarly, reported that sedentary lifestyle-related factors significantly contribute to the incidence of low back pain among working professionals.

Trauma both major and minor continues to be a major contributor to orthopaedic consultations. Young males, due to their higher participation in physical labor and road traffic exposure, are disproportionately affected. have both described the epidemiology of orthopaedic trauma among active age groups, underscoring the need for preventive interventions[9-11].

This study aims to investigate the burden and pattern of musculoskeletal disorders among adult patients visiting a tertiary care orthopaedic OPD over a four-month period. It evaluates the age and gender distribution of cases, the prevalence of trauma as a contributing factor, and seasonal patterns in patient load. Findings from this study may aid in better planning of orthopaedic services, preventive strategies, and community awareness programs.

**Methodology:** This observational, cross-sectional study was conducted in the Orthopaedic OPD, Teritiary care center.over a period of four months (June to September 2023).

Study Design: Cross-sectional, unicentric, observational study

Sample Size: 350 patients

Inclusion Criteria: Adult patients (age >18 years), both male and female, newly attending the OPD with musculoskeletal complaints.

Exclusion Criteria: Emergency patients with fractures or severe trauma requiring immediate intervention, pregnant and lactating women, unconscious patients, and individuals with a history of addiction.

Patients were enrolled after informed consent. Data was collected from prescriptions and OPD records. Variables included age, sex, presenting complaints, and history of trauma. Data were compiled in Microsoft Excel and analyzed using descriptive statistics.

**Results:** Table 1: Age-wise distribution of patients presents the age-wise distribution of patients attending the orthopaedic OPD during the study period. The majority of patients (33.1%) were in the 18–30 years age group, highlighting the early onset and prevalence of musculoskeletal complaints in younger adults. The number of patients gradually declined with increasing age, with only 9.7% above 60 years, indicating a relatively lower turnout of elderly individuals in routine OPD settings, possibly due to mobility constraints or preference for specialty geriatric services.

| **Age Group (Years)** | **No. of Patients** | **Percentage (%)** |
|---|---|---|
| 18-30 | 116 | 33.1 |
| 31-40 | 68 | 19.4 |
| 41-50 | 78 | 22.3 |
| 51-60 | 54 | 15.4 |
| >60 | 34 | 9.7 |
| **Total** | **350** | **100** |

**Table 2:** Gender-wise distribution shows the gender distribution of the study population. Out of 350 patients, 61.4% were male and 38.6% female. This gender disparity may be attributed to the greater likelihood of males engaging in physically demanding occupations, higher exposure to trauma, and more active health-seeking behavior in comparison to females.

| Gender | No. of Patients | Percentage (%) |
|---|---|---|
| Male | 215 | 61.4 |
| Female | 135 | 38.6 |

**Table 3:** Common presenting complaints details the clinical presentations of patients visiting the orthopaedic OPD. The most frequently reported condition was low back pain (30.3%), followed by osteoarthritis (13.1%) and cervical spondylosis (9.4%). These findings support previous studies highlighting spinal and degenerative conditions as common outpatient orthopaedic concerns. Other complaints included joint pain/swelling and polyarthritis, reflecting the broad spectrum of musculoskeletal issues managed at the outpatient level.

| Complaint | No. of Patients | Percentage (%) |
|---|---|---|
| Low back pain | 106 | 30.3 |
| Osteoarthritis | 46 | 13.1 |
| Cervical spondylosis | 33 | 9.4 |
| Shoulder pain with stiffness | 25 | 7.1 |
| Wrist/hand joint pain/swelling | 24 | 6.9 |
| Lower limb pain/swelling | 23 | 6.6 |
| Ankle/foot pain and swelling | 20 | 5.7 |
| Polyarthritis | 11 | 3.1 |
| Others (hip, elbow, fingers etc.) | 62 | 17.7 |

**Table 4:** Trauma history distribution illustrates the proportion of patients with a history of trauma. Trauma was reported in 36.8% of cases, indicating its significant role in orthopaedic morbidity. Further subgroup analysis showed that trauma was more prevalent among males and younger patients, particularly those aged 18–30 years. This aligns with global trends linking higher trauma incidence to more active, risk-prone lifestyles in young adults.

| Trauma History | No. of Patients | Percentage (%) |
|---|---|---|
| Yes | 129 | 36.8 |
| No | 221 | 63.2 |

**Discussion:** This study revealed that low back pain was the most frequent complaint among orthopaedic OPD attendees (30.3%), consistent with findings by and Hameed et al. (2013)[12], who also noted the high prevalence of back pain among both the general population and specific occupational groups.

The gender distribution (61.4% male, 38.6% female) aligns with with Shiva Prakash et al. (2017), where orthopaedic injuries were more frequent among males, likely due to higher outdoor and occupational exposure. The dominance of the 18–30 years age group (33.1%) inOPD visits is also supported by Ren-Hao et al. (2014)[13], who highlighted that trauma and musculoskeletal injuries are common among young adults.

The trauma contribution in this study was 36.8%, with young males being the most affected, correlating with national studies on road traffic accidents and injury epidemiology (Ruikar, 2013; Singh et al., 2016)[14,7] Notably, osteoarthritis and cervical spondylosis were major degenerative complaints in older adults, emphasizing the growing burden of age-related orthopaedic issues.

Limitations of this study include the exclusion of pediatric and emergency patients, as well as the single-center design. Future multi-center studies over extended durations may provide broader insights.

**Conclusion:** This study underscores the predominance of low back pain and the significant role of trauma, particularly among young males, in orthopaedic OPD presentations. The results call for community-based ergonomic education, injury prevention programs, and targeted care pathways to address the dual burden of degenerative and trauma-related musculoskeletal conditions.

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