

Prevalence of Musculoskeletal Dysfunction In Patients Treated At Tertiary Care Hospital – A Retrospective Study

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Abstract:

Background: Musculoskeletal disorders (MSDs) are ubiquitous around the world, and in India, they are the leading cause of long-term pain and disability, impacting millions of individuals. MSD prevalence among adults ranged from 6.92% to 76.8%. The main consequences of MSD are typically long-term pain, physical disability, loss of independence, reduced social interaction, and a decline in quality of life. Due to the increasing prevalence of musculoskeletal illnesses, a trend analysis was conducted to forecast future resource utilisation in the physiotherapy setting. **Methodology:** It was a Retrospective observational study conducted from Jan to June 2024 at tertiary care Hospital, Ahmednagar, India. Data of total 1070 patients who were suffering from various MSDs were taken and percentage of each condition was analysed accordingly in the study. **Results:** The present study was carried out to reflect the trends of patients with various musculoskeletal disorders underwent through physiotherapy treatment at tertiary care hospital. Results of study showed that, under non traumatic condition Low back pain (24%) was found to most common musculoskeletal disorder in rural setup while ACL or MCL Injury (29%) was most common under the traumatic conditions. **Conclusion:** The present study concluded that, musculoskeletal disorders are more prevalent in rural population with the highest trend of Low back pain and Lower limb fractures in non-traumatic and traumatic conditions respectively.

Key words: Musculoskeletal Disorders, Low back pain, Lower Limb Fractures, Trends of patients.

Introduction:

Musculoskeletal disorders (MSDs) are ubiquitous around the world, and in India, they are the leading cause of long-term pain and disability, impacting millions of individuals. MSD prevalence among adults ranged from 6.92% to 76.8%. Nine million people worldwide are plagued by various musculoskeletal disorders (MSDs), which cause chronic pain and disability. Increasing prevalence of musculoskeletal pain and dysfunction, including neck, shoulder, and lower back pain in society with consistently increasing costs has put the healthcare system at burden.[1]

Musculoskeletal disorders are conditions affecting the muscles, nerves, tendons, joints, cartilage, and supporting structures of the upper and lower limbs, neck, and lower back.[2] These are caused by abrupt exertion or extended exposure to physical variables

(repetition, force, vibration, or uncomfortable posture). The main consequences of MSK are typically long term pain, physical disability, loss of independence, reduced social interaction, and a decline in quality of life.[3] MSDs can also be due to the dominant cause of disability burden among occupationally active adults. Research evidence concerning the effectiveness of workplace practices to identify and control adverse biomechanical exposures is mixed, with a number of recent systematic reviews calling for more rigorous research designs to improve evidence of effective practices to control hazardous exposures.[4]

Previous studies reported higher risk of mortality among people with some Musculoskeletal conditions including rheumatoid arthritis (RA) and osteoarthritis (OA) compared with the general population possibly due to increased risk of cardiovascular disease and infection.[5]

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MSDs can result in severe long-term pain and suffering for individuals. In addition to their physical effects, they can also lead to further negative consequences such as reduced work ability, lower farm income, poor quality of life, and the onset of other health problems such as stress or depression. MSDs can cause serious long-term pain and suffering for people. According to rural population-based research, farmers are more likely to report low back pain, and there is absolute evidence of a link between high physical workload exposure (as defined by occupation, physical stress, and vibration at work) and low back pain.[6]

Data published in 2021 on the epidemiology of pain in the back and extremities in rural populations revealed that the 12-month prevalence of back pain was 66% in men and 86% in women.[7]

Rural workers are more likely to experience work-related musculoskeletal problems due to many variables. Work-related musculoskeletal diseases can be caused by various reasons, including increased physical demands, poor nutrition, lack of ergonomic knowledge, limited healthcare resources, and financial constraints.[8] Job demand is directly proportional to MSD development. Physiotherapy plays a vital role in preventing and helping to recover from the illness.[9]

Due to the increasing prevalence of musculoskeletal illnesses, a trend analysis was conducted to forecast future resource utilisation in the physiotherapy setting. This included estimating manpower/time management in OPD, administration, and clinician expertise. In tertiary settings, identifying a disorder's trend might inform preventive initiatives and treatment programs.

Methodology:

It was a Retrospective observational study conducted from January to June 2024 at tertiary care Hospital physiotherapy OPD, Ahmednagar, India. Data of total 1070 patients who were suffering from various MSDs were taken and percentage of each condition was analysed accordingly in the study.

Procedure:

The data was derived from the daily patient registry of physiotherapy department in tertiary care hospital, Ahmednagar. Study population comprised of both in and out patients under 50 years of age, which were referred to musculoskeletal physiotherapy department by orthopaedic department of Vikhe Patil Memorial Hospital and other hospitals in Ahmednagar. Data from January 2024 to June 2024 collected from monthly register of the Musculoskeletal physiotherapy OPD was segregated into traumatic and non-traumatic condition. These conditions were represented in the form of percentage based on each condition.

Results:

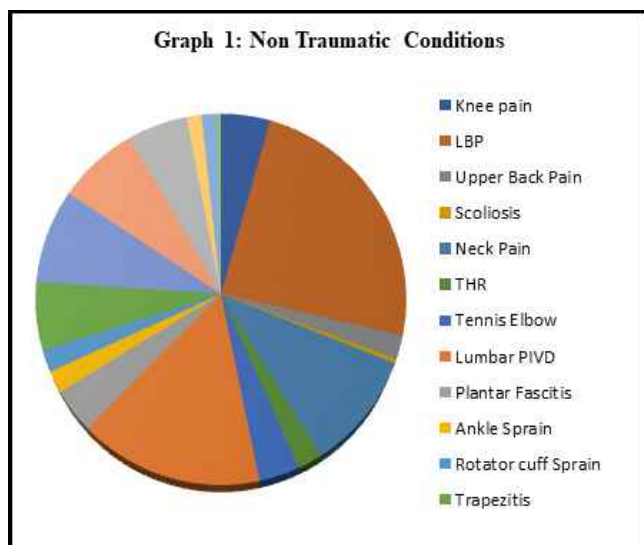
The study was conducted to find out the trends of musculoskeletal disorders in rural population who were visited tertiary care hospital physiotherapy OPD, Ahmednagar. The analysis was done for a percentage of the trend for a specific condition.

Table 1: Percentage of non- traumatic cases

Sr. No.	Conditions	Number Affected	Percentage (%)
01	Knee pain	23	04
02	Low back pain (LBP)	126	24
03	Upper back pain	11	02
04	Scoliosis	2	00
05	Neck pain	53	10
06	Total Hip Replacement (THR)	11	02
07	Tennis elbow	18	03
08	Lumbar PIVD	82	16
09	Plantar fasciitis	20	04
10	Ankle Sprain	10	02
11	Rotator cuff injury	10	02
12	Trapezitis	31	06
13	Lumbar Radiculopathy	43	08
14	Cervical Prolapse Intervertebral Disc (PIVD)	38	07
15	Osteoarthritis (OA) knee	28	05
16	Anterior Cruciate Ligament (ACL) Sprain	07	01
17	Total Knee Replacement (TKR)	07	01
18	Congenital Talipes Equinovarus (CTEV)	02	00

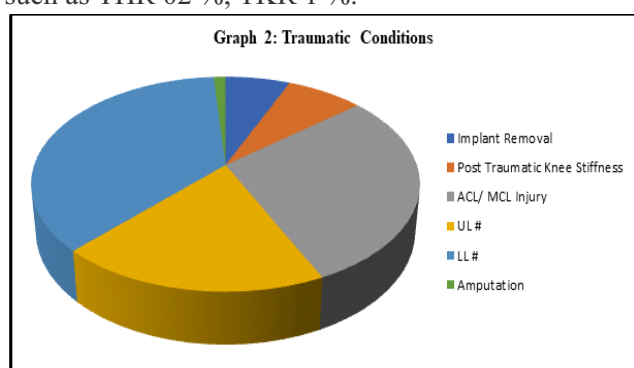
Table 2: Percentage of traumatic cases

Sr. No.	Conditions	Number Affected	Percentage (%)
01	Implant Removal	11	06
02	Post traumatic knee stiffness	13	08
03	ACL/ Medial Collateral Ligament (MCL) Injury	50	29
04	Upper Limb Fractures	33	19
05	Lower Limb Fractures	63	37
06	Amputation	02	01



Non-Traumatic Conditions:

Under the non-traumatic conditions, Low back pain was found to be most common musculoskeletal disorder seen in rural population with the 24%, Lumbar PIVD was 16%, Neck Pain 10% and Lumbar Radiculopathy 8%, Upper back pain 2% . Cold conditions such as Cervical PIVD 7%, Trapezitis 6%, Tennis Elbow 3%, and Rotator Cuff Injury 2%. Cold lower limb conditions such as OA Knee 5%, Knee pain 4 %, Plantarfascitis 4 %, Ankle Sprain 2 %, ACL Sprain 1 %. Total Joint Replacement conditions such as THR 02 %, TKR 1 %.



Traumatic Conditions:

Lower Limb Fractures showed the highest trend with 37.0 % in the duration of six months. Other conditions accounted as follows: ACL/MCL Injury 29 %, Upper limb fractures 19 %, Post traumatic knee stiffness 8 %, Implant Removal 6 %, Amputation 1 %.

Discussion:

The present study was carried out to reflect the trends of patients with various musculoskeletal disorders underwent through physiotherapy treatment at tertiary care hospital. Results of study showed that, under non traumatic condition Low back pain (24%) was found to most common musculoskeletal disorder in rural setup while ACL or MCL Injury (29%) was most common under the traumatic conditions. Musculoskeletal pain includes wide range of conditions, and among them, low back pain and osteoarthritis represents the leading global cause of disability, which are assessed as the number of Years Lived with Disability.[6] Low back pain is a foremost health and socio economical problem all over the world and is linked with high costs in care, work absenteeism and disability.[10,11] Thirty-one studies have reported the prevalence of back pain in India varies from 62% in the general population to 78% , with Lumbar disc herniation (LDH) is one of the prominent causes of low back pain.[12] Among all musculoskeletal disorders, Nonspecific low back pain affects people of all ages and is leading contributor to disease burden worldwide. According to World Health Organization data as of February 8, 2021, musculoskeletal disorders comprise an average 150 different pathologies. This broad group of clinical conditions and diseases includes Osteoarthritis, Rheumatoid arthritis, fractures, dislocations and many other conditions.[13] Previous studies have shown that fear- avoidance beliefs (FABs) affect chronic LBP and physically disability, especially in older adults. Nutrition plays crucial role in LBP. Poor diet quality can be associated with CLBP. Also, the rural population is more addicted to the alcohol consumption, smoking which can be correlated with LBP. The conditions that compromise the intervertebral foramen, such as spinal stenosis and intervertebral disc disease, might lead to muscle atrophy and fat infiltration via mechanism of denervation. [14]

Article given by Mesa-Castrillon CI et al suggested that, globally the rural population had 26 % higher odds of reporting musculoskeletal pain as compared to urban populations (mean odds ratio [OR] =1.26). The 3 months prevalence of neck pain was found to be 8.5% in rural population.[15] Low back pain ranks as one of the primary causes of disability, trailing closely behind the common cold as the second most common reason for work absenteeism in individuals. Reason behind the low back pain as the most common condition is, LBP can develop unexpectedly or progressively, with or without attribution to an originating event. Nonspecific LBP, which is defined as a pain of unknown origin extending from the gluteal fold to the upper lumbar vertebrae, is indicated in majority of cases. These pains initiate from an assumed musculoligamentous process.

Mahdavi SB et al did a systematic review and meta-analysis on Association between sedentary behavior and low back pain; which supports the findings of our study by stating that, excessive consumption of cigarette smoking was associated with an elevated likelihood of low back pain. Population from rural area were taken into consideration for this study, there were maximum number of workers which demanded high loads of manual work such as lifting heavy loads, whole- body vibration, awkward postures, Brick molders, farmers which have to work in the farm with forward bending posture prolonged period. This could be the cause of low back pain which was found to most common among rural population. It is seen that musculoskeletal symptoms in lower back are correlated with other body segments, including the neck, upper back and shoulders.[16]

The study conducted by Das B et al supported to our findings, concluded that aged brick molders suffered from severe low back pain and knee pain along with upper limb disorders due to repetitive activities.[17] Author Kochhal N et al did a study on, Incidence of anterior crucial ligament injury in a rural tertiary care hospital suggested that, Patients falling in age group of 16-25 years of age are more prone to have ACL

injuries in rural population.[18]

Article given by Attum B et al on Intertrochanteric Femur Fracture stated that Intertrochanteric femur fractures are more common in elderly population with osteoporosis due to low energy mechanism. The findings of this study supported the findings of present study.[19] Job demand is associated with musculoskeletal disorders development.[1]

Author Thomas Matheve T et al did the study on, Role of Back Muscle Dysfunction in Chronic Low Back Pain: State- of-the-Art and Clinical Implications and concluded that, there are changes occurred in the muscle structure and muscle function in patients with CLBP. The findings of the study supported the result of present study.[20]

According to present study, In the traumatic conditions, Lower limb fractures (63%), ACL or MCL Injury (29%) were found to be most common among rural area. The reason behind this could be Road traffic accidents, fall injuries among construction workers, repetitive movements performed by the individual at Industrial work station such as squatting, standing for prolonged time. Intertrochanteric fracture, lower limb bone fractures occurred in older people due to diminished perception of ground, reduced bone density due to degenerative changes. ACL tears can also happen in older individuals through slips and falls and are seen mostly in individuals over forty years of age due to wear and tear of ligament.

Conclusion:

The present study concluded that, musculoskeletal disorders are more prevalent in rural population with the highest trend of Low back pain and Lower limb fractures in non-traumatic and traumatic conditions respectively.

Limitations:

- 1] Record of more duration should be taken under considerations as only data of 6 months was analyzed during the study.
- 2] Only one tertiary care hospital was taken under consideration.

Conflicts of interest: Authors asserted no conflict of interest

Funding source: The study was not funded by any source.

Clinical implications:

As the study was conducted in the rural area, with the results we got to know which MSK disorder is most commonly faced by the population and how the physiotherapy set up can be improved to be utmost beneficial to the better and healthier rural population.

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