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Prevalence and study of risk factor for work related Musculo-Skeletal disorders among farmers

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Abstract
Work related musculo-skeletal disorders are Non-Traumatic disorders of the soft tissues of the Musculo-skeletal system that can be caused or aggravated by work activities such as repetitive forceful motions, awkward postures. Use of vibrating tools or equipment or mannual handling of heavy loads. In villages more people works very hard on day. So Musculo-skeletal injury are more in villagers. The purpose of study is to gather information about work related problems. So it is necessary to know proportion of Musculo-skeletal in rural farmers and what factors can be attributed to work demands, that lead to work related Musculo-skeletal disorders.

Keywords: musculo-skeletal disorders, postures soft tissue injuries, awkward aims and objectives

Introduction

Work related musculoskeletal disorders (WRMSDs) are non-traumatic disorders of the soft tissues of the musculoskeletal system that can be caused or aggravated by work activities such as repetitive forceful motions, awkward postures, use of vibrating tools or equipment or by manual handling of heavy loads, awkward loads. Examples include carpal tunnel syndrome, tendinitis, epicondilitis, low back pain, rotator cuff disorders etc. These work related disorders are primarily, but not exclusively associated with the upper extremity and upper back.

Work related musculoskeletal disorders are known as repetitive strain injuries (RSIs) or cumulative trauma disorders (CTDs) or over-use injuries. Cumulative trauma disorders are impairments of the muscles, joints, tendons, ligaments, peripheral nerves and vascular system [2]. These disorders are considered to be work related when the work environment and the performance of work contribute to causing these disorders [3]. Work related musculoskeletal disorders have been described as one of the main health problems among health care workers [4]. Work in health care units has been shown to be associated with complaints relating to the musculoskeletal system [5].

Among various risk factors, work related psychosocial factors appear to play a major role. According to the literature, the term 'psychosocial factors' may involve anything from personality to job organization [19]. Recently, psychosocial work factors have been considered and identified risk factors including poor job satisfaction, poor relationship with colleagues, monotomy at work, low mood, low work control and high work demand. Causal relationships are documented by studying the mechanism of pathogenesis. Mechanical as well as metabolical mechanisms may be involved in the development of musculoskeletal disorders and mental as well as physical loads may play a role. Different kinds of exposures can be injurious to different structures, through various pathological pathways. High levels of physical exposure at work give rise to muscular fatigue and impaired coordination. Exposure to high force, but still not so high that it exceeds the strength of the tissue, may also lead to micro-ruptures in muscles. Moreover, metabolic changes may occur. If sufficient time for recovery is provided, inherent repetitive process will heal the micro-ruptures and adaptation, such as improved strength and endurance, will occur. If exposure is repeated with short intervals, however, it may lead to inflammation and degeneration. The tissues affected are besides the muscles, also the connective tissue including tendons and their sheath, joints, cartilages, disc and bone. Biomechanical strain developed during repeated lifting and transferring of patient is believed to be a major contributing factor to low back pain. Forceful static or repetitive contraction of muscles, thereby compressing their vascular epitenon, perdition and endotenon microstructures. This in turn can cause ischemia, febrile tearing and inflammation. Rapid cyclic loading does not allow much needed recovery time to the visco-elastic biological tissues. Repeated load application may result in cumulative fatigue, reducing their stress-bearing capacity [20]. in daily practice, occupational health and safety services and ergonomics consultancies have to advise management on interventions to reduce musculoskeletal workload and related disorders [12].

Operational Definitions

Survey

Survey is defined as a research technique, which involves collecting data from large number of people so that general overview of the group can be obtained of self-reported work-related

Musculoskeletal disorders

Musculoskeletal disorders are disorders or disease of muscles, tendons, ligaments, peripheral nerves, joints, cartilage and bones.

WRMSD

Work related musculoskeletal disorders are a group of painful disorders of muscle, tendons and nerves. tendonitis, thoracic outlet syndrome are examples.

Methodology

- **Study design:** In the present study descriptive survey method of investigation was used.
- **Sample size:** 500 farmers were selected for the present study from Haryana.
- **Study Design:** Villagers in Haryana.
- **Sampling:** Convenient sampling was used for 500 farmers.
- **Materials:** Nordic Pain questionare.
- **Duration of Study:** 3 Months

Inclusion Criteria

- Both male and female agriculture workers.
- Age b/w 18-40 years.
- Those who can understand simple English and Hindi words.

Exclusion Criteria

- Recent injury or Fracture
- Recent Surgery
- Any degenerative disease
- Any Trauma and Any Infection
- Metabolic disorders

Data Collection

Data was collected from different villages in Haryana. Subjects were selected with the help of convenient sampling from Haryana.

Procedure (Methods)

All farmers of age 18-40 years were selected. Exclusion criteria was introduced and final sample was made for analysis an explanation of the procedure of the study was given to the subjects, to be made comfortable by telling them about of purpose of the research. Those were also be told that their response will be kept on confidential and will be used for research purpose. Explaining the need and purpose of study to all subjects. After that inform consent form and was distributed and collected from farmers on same day.

The survey is conducted on prevalence and study of risk factor work related musculoskeletal among farmers in rural areas in haryana respondents for the study was done from six villages in district Panipat (Haryana) A four section questionnaire was employed as the survey instrument. Section A sought information on demographic profile such as age, height, weight and genders section B sought to general information of work related practice and work status. Nordic questionnaire consisted of questions referring to nine body areas. There are 3 uper limb segments (Shoulders, elbows, wrists/hands/thumb) 1 and 3 lower limb segments hips knee ankle/fit and 3 trunk segments (Neck, upper back, lower back) Section C contain items on perceptions on job related risk factors that may contribute to development of work related musculoskeletal disorders while section gleaned data on coping strategies toward reducing the risk for development of work related musculoskeletal disorders in peoples among rural areas in Haryana.

Statistical Analysis

Table 1: Distribution of Acute and Chronic pain areas

Body Area	Acute	Chronic
Neck	60	62
Shoulder	50	45
Elbow	20	22
Wrist	30	30
Upper back	20	26
Lower back	74	74
Hip	60	62
Knee	76	73
Ankle	50	40

Table 2: distribution of subjects according to Gender.

Genders	Males	Females
Total No.	262	238
Percentage	52%	48%

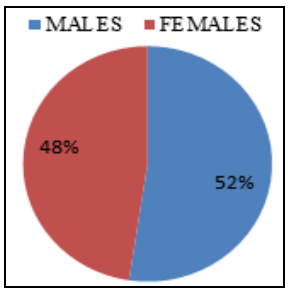

Fig 1

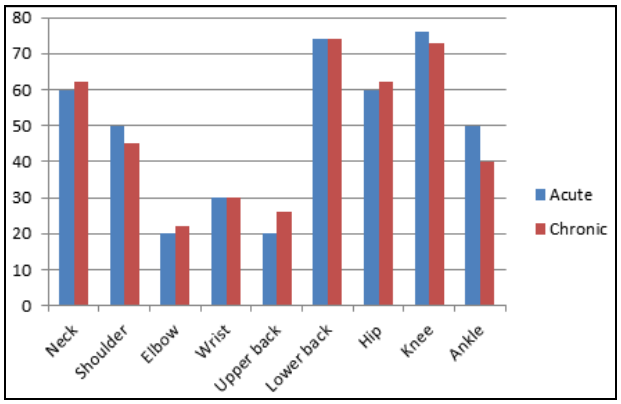

Fig 2: Prevalence of acute and chronic MSDs

Table 3: overall distribution of musculoskeletal disorders

SR. NO.	Pain area	Total NO.
1	Neck	122
2	Shoulder	95
3	Elbow	42
4	Wrist	60
5	Upper Back	46
6	Lower Back	148
7	HIP	122
8	Knee	149
9	Ankle	90

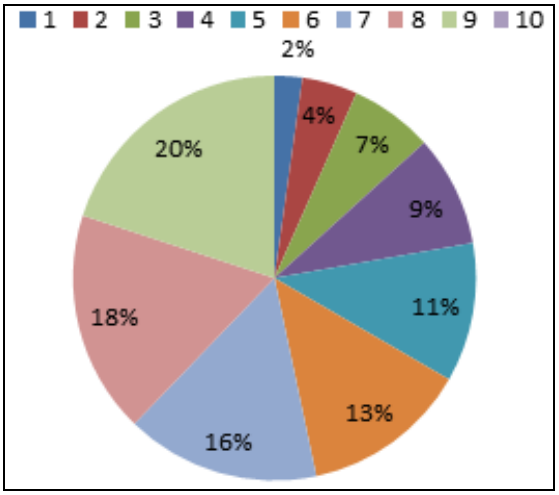

Fig 2: overall prevalence of musculoskeletal disorders

Conclusion

From this study we can conclude that there is high risk of developing Musculoskeletal disorders in farmers especially in the knees and low back region. Prevalence among them not uniform. Further studies, preferably are required farm workers with growth emphasis on ergonomic factors. This would represent a major step forward in prevention of Musculoskeletal symptoms disorders among farmers.

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