

Research Paper :

Injury and health hazards related to manual material handling tasks

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ABSTRACT

For more than a decade, farming has been rated one of the most dangerous occupations in the developing countries. A considerable number of adverse health conditions, including musculoskeletal disorders, are linked to agricultural work. The present study was conducted in villages of Mawali tehsil of Udaipur. For the present study a sample of 100 agricultural workers (50 male and 50 female) engaged in agricultural tasks from last 10 years were selected for collecting data on injury and health hazards related to manual material handling tasks. The agricultural workers repeatedly perform lifting, pulling, twisting and bending motions that exert force on the musculoskeletal system of the body and thereby leading to fatigue and pain.

Key words : Injury, Health hazards, Manual material

Agriculture is an occupation framed within the context of family and community. The farm family is the central entity in agricultural production involving every member be it children, women or the elderly. It is carried out in a rural environment and there is no clear-cut distinction between working and living conditions. The symbiotic relationship between home and work allows all family members to be exposed to occupational hazards of the farm operations. Thus, agricultural worker is subject to the health hazards not only of the rural environment but also of those inherent in the work processes.

For more than a decade, farming has been rated one of the most dangerous occupations in the developing countries. A considerable number of adverse health conditions, including musculoskeletal disorders, are linked to agricultural work. Many risk factors associated with the development of musculoskeletal disorders are commonplace in agricultural tasks. Occupational risk factors include static positioning, forward bending, heavy lifting and carrying, kneeling, and vibration. Unfortunately, there has been limited application of research related to ergonomics and musculoskeletal disorders, although farmers frequently report musculoskeletal signs and symptoms. Women in rural areas spend most of their time meeting the basic needs of the family, such as fetching water and firewood, preparation of food and caring for dependants.

Work-related musculo-skeletal disorders (WMSDs) of upper limbs (UL) and spine, in the last 35 years, have become extremely widespread, reaching

epidemic level in all industrialized countries (Hagberg *et al.*, 1995). More recent European statistical data regarding upper limb musculoskeletal disorders shows that sectors in leading position (after manufacturing) are construction, fishing and agriculture. In 2004 in the agricultural sector, 51 per cent of all recorded work-related diseases were upper limb musculoskeletal disorders. In Italy, in 2005, WMSDs (spine and upper limbs) recorded in agriculture, were nearly 60 per cent of all work-related diseases. Other data report WMSDs incidence rates exceeding 3 per cent per year. These data confirm the need to tackle more systematically this issue in the specific sector.

Manual material handling (MMH) is defined as the unaided moving of objects, often combined with twisting and awkward postures, and contributing to musculoskeletal disorders. Traumatic occurrences (slips, trips, falls, and blows to the body) cause other bodily injuries, pains, and disabilities. Typically, not one specific occurrence but rather the awkward body positions, repetition, force, and duration associated with movement lead to back, neck, and other problems like Cumulative Trauma Disorders (Anonymous, 2007).

The lifting and carrying of loads in subsistence and agriculture on small landholdings are unavoidable. With the prevalent levels of poverty in rural areas and the lack of infrastructure, many people are carrying loads of 30 kg or more on their heads, shoulders and backs for long distances. In developing countries the lack of automation in agricultural fields necessitates the increased prevalence of manual materials handling tasks.