



Causes of Musculo-Skeletal Disorder in Textile Industry

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Available online at: www.isca.in

Received 20th September 2012, revised 1st December 2012, accepted 13th December 2012

Abstract

Poor work pattern and working environment gives unnecessary physical efforts, which reduce efficiency and productivity also. Sustaining any static posture, such as sitting, increases the demand on the muscles, ligaments, and other soft tissues of the musculoskeletal system. It is not surprising then that overall discomfort and pain in the back, neck, and shoulders are common symptoms reported by workers who sit for most of their workday. Sitting alters the normal curvature of the spine and puts pressure on the discs. With prolonged sitting this pressure can cause compression of the discs. These resulting chronic back pain and possible nerve damage can impact on workers ability degeneration of the cervical spine, sometimes known as cervical spondylitis, can have serious consequences. Compression of the spinal cord at the level of cervical spine can take place, resulting in weakness and wasting of the upper limbs. This may then spread to the lower limbs. high percentages were suffered from MSDs commonly associated with poor ergonomic design in the workplace. MSDs commonly associated with poor ergonomic design in the workplace. Without the application of ergonomic principles, tools, machines, equipment, and workstations are often designed without much consideration of the fact that people are of all different heights, shapes, and sizes and have different levels of strength. It is important to consider these differences in order to protect worker's health and comfort. Without the application of ergonomic principles, workers are often forced to adapt themselves to poor working conditions.

Keywords: Musculoskeletal disorder, textile industry, wrong posture, ergonomics.

Introduction

Musculoskeletal disorders (MSDs) are a common health problem throughout the world and a major cause of disability. The economic loss due to such disorders affects not only the individual but also the organization and society as a whole. At the present time, MSDs is one of the most important problems ergonomists are encountering in the workplace all over the world. Carpet weaving is one of the most tedious professions, requiring long hours of static work and can be a high-risk occupation for developing MSDs as awkward posture, repetitive movements and contact stress are common¹. In a study on carpet mending operation as a part of carpet industry that the working conditions were poor and awkward working postures were very common. They reported high rate of musculoskeletal problems in knees, back and shoulders of the carpet menders. Prevalence of low back pain in India was mostly analysed in case of unorganized sectors². In case of textile industry a cross sectional study among 514 textile workers of Shree Bapiro Deshmukh, Grinni, Dardha, India remark that 57 workers suffered from low back pain³.

Objectives: The main aim of this study are to know about Musculoskeletal disorders (MSDs) and what are the causative and preventive measures.

Causes of Musculoskeletal disorders in textile industry: Physical and psychosocial load, poor climatic conditions, and

vibrations have been identified as risk factors that contribute to developing MSDs among agricultural workers. In machine manufacturing plant and textile weavers, high physical demands, poor postures and insufficient recovery time are the contributing factors to develop low back pain. In spite of apparently similar occupational pattern of work, gender differences do exist in the prevalence and severity of MSDs and perception of work as stressors⁴. Work-related musculoskeletal disorders (WMSDs) have emerged as major health problem among workers in both industrialized and industrially developing countries. Several work place factors, such as repetitive work, awkward and static postures, have been identified as being associated with upper extremity pain and discomfort. Studies in Iranian hand woven carpet industry have report ted high prevalence of musculoskeletal problem among weavers due to constraints of working postures, poor design of loom, working time, repetitive work and seat type⁵. Incongruence of work with man or vice versa with poor work postures have caused dangerous complications with locomotion organ disorders which has resulted in creation of multiple physical, mental and financial pressures, the reflection of which can finally be observed in the community. Attention to such problems is of importance, because in the one hand, the resulting disturbance in individual is either irreversible or needs very lengthy treatment, and on the other hand, it results in other sufferings with financial losses to the individual, his family, surroundings and the community in turn⁶. Shoe manufacturing industry is among the industries with high prevalence of musculoskeletal disorders, because the workers of

such industries perform sewing operations almost all of the time, which doing such jobs without observing the appropriate principles can result in irreversible damages to musculoskeletal system of the individuals⁷. In this study, people working with sewing machines in shoe manufacturing industry were studied with to evaluate prevalence of musculoskeletal disorders among them⁸.

In general, work related musculoskeletal disorders are caused from repetition with continuation of trauma or pressure on muscles, tendons, joints or bones in long run, due to repeated works without observing ergonomic principles. The most prominent example of them is different kinds of low back pain, which is almost a common disease with around 80% all people get inflicted with it at least once during their lifetime. According to the latest studies carried out in relation with disease burdens with risk factors in Iran in the year 2004, musculoskeletal disorders occupy the second position after cardiovascular diseases among the work related diseases⁹. Diseases like musculo-tendinous pressure or strain/degenerative changes, stiffness with rigidity of vertebral column in the morning, radiating pain from sciatic nerve, epicondylitis, carpal tunnel syndrome can be considered as musculoskeletal disorders caused by not observing the proper regulations of doing the job.²⁻⁴ In accordance with the report of World Health Organization in 2002, low back pain constituted 37% of all occupational risk factors which occupies the first rank among the diseases complications caused by work¹⁰. Such high prevalence of complications at international levels have made the World Health Organization to name the first decade of the third millennium as "the decade of campaign against musculoskeletal disorders (as the silent epidemic)"¹¹.

Preventive measures: Put your feet around the load, with your body over it (if this is not feasible, try to get your body as close as possible to the load). i. Use the muscles of your legs when lifting. ii. Straighten your back. iii. Pull the load as close as possible to your body. iv. Lift and carry the load with straight downward turned arms.

Correct handling techniques

Lifting: Before lifting the load, you should plan and prepare for the task. Make sure that: i. You know where you are going The area around the load is clear of obstacles. ii. Doors are open and there is nothing on the floor that could trip someone or make them slip. iii. You have a good grip on the load. iv. Your hands, the load and any handles are not slippery. v. If you are lifting with someone else, both of you know what you are doing before you start.

You should adopt the following technique when lifting the load: i. Put your feet around the load and your body over it (if this is not feasible, try to keep your body as close possible to the load and in front of it). ii. Use the muscles of your legs when lifting. iii. Keep your back straight. iv. Pull the load as close as possible to your body. v. Lift and carry the load with straight arms.

Pushing and pulling: Pushing and pulling handling devices such as trolleys and barrows is particularly strenuous for the back, shoulders and arms. i. Pushing and pulling is done using the body's own weight: when pushing you should lean forward, when pulling you should lean backward. ii. You have enough grip on the floor in order to lean forward/backward. iii. You avoid twisting, turning and bending the back. iv. Handling devices have handles/hand grips that you can use to exert force. Handle height should be between the shoulder and waist so that you can push/pull in a good, neutral posture. v. Handling devices are well-maintained so that the wheels run smoothly. vi. Floors are hard, even and free from rubbish (good housekeeping).

Environment

The following characteristics of the work environment may increase the risk of back injury:

Space available: A lack of space to carry out manual handling may lead to inappropriate body postures and dangerous imbalance in the loads.

Floor: Handling loads on different working levels or on floors that are slippery, uneven or unstable (such as working platforms or fishing boats) may increase the risk of accidents and back injury.

Climate: The physical climate (temperature, humidity and ventilation) may affect the risk of back injury. Heat makes you feel tired, and sweat makes it hard to hold tools, requiring more force. Cold can make your hands numb, making it hard to grip.

Lighting: Insufficient lighting may increase the risk of accidents when handling loads. It may also make you work in awkward positions to see clearly what you are doing^{5,6}.

Conclusion

Safety and health of workers is important for smooth and effective functioning of any organization. There are numerous risk factors at workplace that can affect workers health. Comfort and Performance in one or more ways. Typical health effects of working environment are headache, fatigue, impaired vision, hearing loss, musculoskeletal problems and reduced work performance. in the Textile industry ,where the workers/operator performs task in a sitting/standing position, static and awkward postures, duration of work, furniture design and adequate rest pause are most often associated with the occurrence of serious MSDs. Health effects may show up years after exposure or after repeated or long exposure. Due to increasing complexity of occupational health and safety problems, there is a need to specify more and more aspect of work place and work environment to reduce musculoskeletal problems and occupational health hazards.

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