Study and Implementation of Process of Participatory Ergonomics Interventions in Industry

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Abstract- **In previous days doctors noted that workers who required heavy load or to maintain body positions for long periods of time developed musculoskeletal problems. Within last 20 years research has clearly established connections between certain job tasks and or musculoskeletal disorders (MSD) with the help ergonomics study.**

Participatory ergonomics (PE) is an intervention that is designed to engage both workers and managers to effect meaningful changes in work risks by pooling the workers' knowledge and the employer's resources.

Workers are at high risk of work-related musculoskeletal disorders (WMSD) and lose 39% more time from work than workers in all private industries. WMSD may be caused by high risk work tasks, but the complex nature of construction work often makes it challenging to address these risks. Physically demanding activities such as carrying loads, working in awkward, bent-over or twisted postures for long periods of time, and handling vibrating tools create such risks, yet the dynamic nature of activities over the lifecycle of construction. Projects require innovative interventions to eliminate the high risk physical exposures.

Index Terms- PE (participatory ergonomics), MSD (musculoskeletal disorders), RULA (Rapid Upper Limb Assessment), ERRP (Ergonomics risk reduction process).

I. INTRODUCTION

A characteristic feature of most PE interventions is the formation of some type of "team" or committee, typically made up of employees or their representatives, managers, ergonomists, health and safety personnel, and possibly research experts. Once formed, teams usually receive training from an expert, most often an ergonomist, to become familiar with ergonomic principles. Once this foundation is in place, the group uses its newly developed knowledge to make improvements. Because team members work together to improve workplace conditions through participation, communication and group problem-solving in PE interventions, they can have a positive impact on workers' health Ideally, the PE approach encourages workers to be involved in controlling their own work activities, which consequently decreases work organization or psychosocial risk factors for MSDs. The nature of the training also varied greatly, though many described general ergonomic training.

II. METHODOLOGY

Improvement is an undertaking striving for gaining extra benefits for both, organization and its customers. Usually in literature on the subject, the term is presented in prequalify activities context – 'continuous improvement' and most authors associates the term with Japanese methods of effectiveness and efficiency of organization activities for the benefit of internal and external customers improvement. According to the definitions by S. Piersiala and S. Trzcielinski presented in continuous improvement is planned, organized and systematic process of continuous change for the purpose of losses elimination/limitation, as well as productivity and competitiveness improvement, requiring commitment of employees on all the levels of organization structure. Hence, improvement is solving problems, which are both, differences between requirements and results (effects), and searching for opportunities/ possibilities to improve effectiveness and efficiency of actions and processes. Thus, to improve, the knowledge of processes (or objects analyzed) and of methods and tools that can be applied, as well as skills in using them, is necessary to adopt following methods

- Top managers commitment,
- Team work, active communication and cooperation between all the interested parties (participation),
- Pro-preventive orientation, based on searching for and eliminating potential threats and their causes,
- Trainings and qualifications and skills of employees improvement,
- Joining operators in maintenance actions, delegating responsibilities and powers,
- Methods of work, work environment and safety improvement

III. PROCEDURE (PROBLEM FORMU LATION)

In developing countries nearly 60% of tota working populations are directly involved with different types jobs in the forma for unrecognized sectors. Work related musculoskeletal disorders (WMSD'S) are the most prevalent illness among informal sector workers in India.

A majority of these disorders are the resuts of repeated stress.

The solutions for the above problems are

A. Implementations of interventions: there are many possible outcomes by which ergonomics interventions may be evaluated .classically these range from efficiency determined under ideal conditions ion selected groups in a laboratory through effectives measured under large groups to cost, effectiveness or benefits.

B. Authors, workers, researchers were presented and efficiency of interventions were analyzed mainly on the basis of productivity and wellness of the physiological conditions of worker.

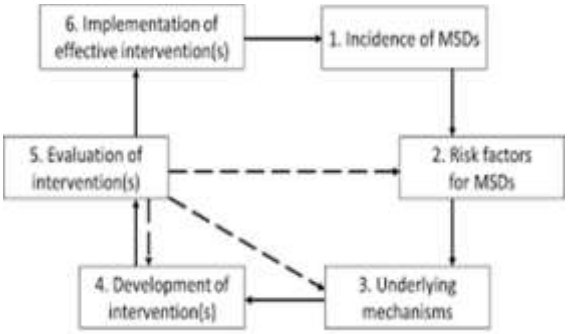
C. From the modified method study and by designing a new workstation, to reduce the work related discomfort time an ergonomically heath status and improved technology.

Behavioral interventions focus on the in divided workers behavioral or capacity .it focus on increasing fitness strength on stress reduction workshops on improving work methods. The work related portion of the injuries and resulting disability is potentially preventable and it is improvement to identify interventions for reducing work related musculoskeletal disorder (WMSD's)

IV. UNITS OF MEASUREMENT

V. HELPFUL HINTS

- Currently 40% of the world costs are attributed to musculoskeletal disorder.
- Ergonomic interventions have been successful. In reducing the number of MSD's by over 50%, especially in professions that expose employee to a high eve of work risk factor.
- Participatory ergonomics utilizing workers involvement as part of an intervention, has been a successful technique for the prevention of MSD's
- When the workers is involved in ergonomics interventions it offers a greater like hood of reducing musculoskeletal problems



Technology	Healthcare	Energy
Risk panning on corporate level	Define risk objectives risk information input	Establish context

Perform risk assessment	Risk identification, risk analysis, risk evaluation	Risk identification, risk establishment, risk evaluation
Perform risk assessment or validation		
Perform risk response and monitoring	Risk treatment	Measure identification, measure planning, decision risk treatment.

Table 1: high eve IT risk management process

VI. PUBLICATION PRINCIPLES

Participatory ergonomics programs have been proposed as the most effective means of eliminating, or redesigning, manual tasks with the aim of reducing the incidence of occupational musculoskeletal disorders. This review assesses the evidentiary basis for this claim; describes the range of approaches which have been taken under the banner of participatory ergonomics in diverse industries; and collates the lessons learned about the implementation of such programs.

Some of the principles for effective way to solution of musculoskeletal disorder is ERRP (Ergonomics risk reduction process) which support the each factor of process

- Management leadership
- Employee participation
- Training
- MSD;s management
- Process evaluation
- Job hazard analysis and control

VII. CONCLUSION

Consequently these people perform strenuous manual tasks for prolonged periods and suffer from musculoskeletal disorders affecting different body parts. For them ergonomics interventions are the best solutions for the preventions of work related musculoskeletal disorders.

However the underneath reasons for concern is that most of the interventions are improperly designed and the most significant aspects that deserve special mentioning are lack of maintenance.

VIII. ACKNOWLEDGMENT

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