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SPOTLIGHT

Initial findings of WSH Institute's fatigue study

A research project has been commissioned by the WSH Institute to carry out a fatigue management study in the Marine and Logistics sectors in Singapore. This project studied the fatigue levels, sleepiness, reaction time and situational awareness of shift workers.

Collection of baseline data has concluded. Preliminary findings showed that fatigue was observed in night shift workers, with increasing fatigue levels as the shift progresses.

The next phase of the study will proceed with the development of interventions to address the fatigue risks, followed by a verification field study to ascertain improvements, if any. Results of the study and its benefits to the industry will be made available once the project is concluded.

For more information, please visit WSH Institute.

Articles Reviewed In This Issue:

Fatigue in the workplace: causes and countermeasures

Date of publication: Jan 2013
Source: Fatigue: Biomedicine, Health & Behavior, Volume 1, Issue 1-2
Author: Ann Williamson & Rena Friswell

Synopsis:
Even though fatigue is a common work-related risk, most studies have focused on fatigue in general instead of as a workplace issue. This paper examined the causes, effects and countermeasures of fatigue from the

occupational health and safety perspective. Besides looking into the nature of fatigue problem at workplaces, it also discussed how it differed from other settings and how the current risk assessment approach to occupational safety could be used to deal with fatigue.

It reviewed how various influencing factors such as the type of work, time of day, shift type, shift pattern and rotation, medical conditions and ageing impact on a worker's sleep, rest and fatigue. Frameworks used for managing other risks in the workplaces were also applicable to occupational fatigue. The list of countermeasured for fatigue risks included appropriate design of work hours, reducing fatigue from task, technological approaches, selection of suitable employees for shiftwork, and education of employees. It also concluded that more effort, research and evaluation were needed in fatigue risk management.

To read more, click HERE.

Fatigue risk management in the workplace

Date of publication: Feb 2013
Source: Journal of Occupational and Environmental Medicine, Volume 54, Number 2
Author: Steven E. Lerman, Evamaria Eskin, David J. Flower, Eugenia C. George, Benjamin Gerson, Natalie Hartenbaum, Steven R. Hursh and Martin Moore-Ede

Synopsis:
This article provides the background, key concepts and references to support a Fatigue Risk Management System (FRMS).It describes five key levels of defence for an FRMS, viz:
(a) **Addressing understaffing issues** – such as reengineering processes to reduce the number of employee positions needed; cross-training employees
(b) **Shift and Duty Scheduling** – scheduling that permits frequent opportunities to obtain night time sleep and to recover from night shift sleep debt
(c) **Employee Training and Sleep Disorder Management** – improve knowledge and behaviour of workers to manage their own fatigue; workplace programmes to screen, assess and treat sleeping disorders.
(d) **Work Environment** – improve ergonomics and environmental factors such as lighting, temperature, humidity, noise; scheduling critical tasks at times of maximal alertness
(e) **Individual Risk Assessment and Mitigation** – train employees to monitor self and peers for signs of fatigue and to respond accordingly with appropriate mitigation strategies.

Another key consideration is periodic evaluations to improve the management system. This can be achieved through defining and measuring both the leading (such as percentage of workforce trained, staff-work load balancing) and lagging (such as safety performance and worker compensation cost) indicators.

To read more, click HERE.

Assessment of muscle fatigue associated with prolonged standing in the workplace

Date of publication: Mar 2012
Source: Safety and Health at Work (SH@W), Vol. 3, No. 1
Author: Isa Halim, Abdul Rahman Omar, Alias Mohd Saman and Ibrahim Othman

Synopsis:
This study looked at the psychological fatigue experienced by industrial workers whose jobs required prolonged standing. In addition to questionnaire survey, muscle fatigue in the muscles of the lower back (erector spinae) and legs (tibialis anterior and gastrocnemius) of 20 male workers were measured using surface electromyography. It found positive association between the results of psychological fatigue and muscle fatigue assessments. Some of the working conditions contributing to discomfort and muscle fatigue included: prolonged standing, extreme working postures, limited recovery time, static standing posture and continuous exposure to

vibration. To mitigate fatigue, sit-stand stool to alternate standing with sitting, comfortable shoe design, adequate work rest, anti-fatigue mat and small breaks during work hours were suggested.

To read more, click HERE.

Occupational fatigue research: Facing the challenges head on

Date of publication: 2010
Source: From Research to Reality, Volume 13 Number 1
Author: Liberty Mutual Research Institute for Safety

Synopsis:
Literature on shift-work safety showed that it was more effective to focus on limiting risks associated with the type of shift, rest break intervals, successive shifts and hours on duty than just on controlling or regulating work hours. Practical tools such as the 'Scheduling Impact Risk Estimator' (SIRE) are available. SIRE is a spreadsheet application that enables users to estimate the relative risk of injury using information on the work schedule. General scheduling recommendations included scheduling day shifts instead of afternoon or night shifts; limiting consecutive shifts; providing frequent rest breaks and keeping schedules regular and predictable.

To read more, click HERE.

Other Useful Resources:
• Sleep, Fatigue, Recovery, and Depression After Change in Work Time Control (Journal of Occupational & Environmental Medicine) [Access via publisher's website]
• The challenges and opportunities of technological approaches to fatigue management (Accident Analysis & Prevention) [Access via publisher's website]
• Managing fatigue in the workplace (SafeWork SA)