

Workload, fatigue and job satisfaction in repetitive blue-collar work

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Abstract

The methods used in a sample of companies to determine production targets and line speeds for repetitive work tasks were documented, along with the nature and level of task demands, employee perceptions of their own influence over targets or line speeds, and job satisfaction. Employee ratings and researcher analyses showed that the tasks studied were slightly more mentally than physically demanding. Work rates were evaluated in terms of employee levels of fatigue, stress and job satisfaction; for a subset of tasks, a predetermined motion time system was also used. Focus of the present paper is on factors related to fatigue; a substantial proportion of variance in fatigue was accounted for by levels of the task, job and workload characteristics measured.

Introduction

This paper presents some of the findings from a recent research project that originated because of evidence that the formal methods that are sometimes used to set production targets or line speeds for repetitive work tasks, including predetermined motion time systems (PMTS), sometimes make inadequate allowance for task difficulty (Hoffmann et al, 1993; Johansson, 1981; O'Bryan et al, 1991; Sendapperuma et al, 1991). This can result in required work rates being too high, with resultant increases in perceived workload, fatigue, stress and injury risk. There was also some prior evidence that work rates or targets are experienced as more acceptable by workers who have participated in the process of setting their levels or who have a greater sense of control over their work pace (Johansson, 1981; Shikdar & Das, 1995).

Data were collected in 22 workplaces, mostly in manufacturing industry. Companies were recruited which had one or more repetitive, short-cycle work tasks that were paced by the production process or by a production target, with several employees per task who spent a substantial part of their work time on that task and who were potentially available for interview. During the latter part of the project an additional criterion was that the company used some type of formal method for setting work rates, such as Modapts or other systems using standard times (Heyde, 1976). This requirement was introduced because the project was intended to include