score (with all exertions explicitly represented). This presentation describes the RSI and COSI algorithm. A brief complex task example compares the RSI to the 1995 SI and showcases the RSI's much improved utility as a tool for the design and evaluation of complex tasks.

1631e UPDATE ON GERMAN RISK ASSESSMENT TOOLS FOR UPPER LIMB MSDS

B Weber*, U Hoehne-Hückstädt, D Ditchen, D Seidel, I Hermanns, R Ellegast. *Institute for Occupational Safety and Health of the German Social Accident Insurance (IFA), Sankt Augustin, Germany*

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In Germany, several tools for the risk assessment of physical workload are available for different applications. Besides different screening methods, there are technical systems that can be used in the field and/or laboratory. The focus of the work of the Institute for Occupational Safety and Health of the German Social Accident Insurance (IFA) is located on the risk assessment of physical workload using technical measurements (CUELA[1]). By providing assessment procedures for different body regions, an important gap in the prevention of work-related MSDs is to be closed here. Regarding risk assessment for upper limb MSDs, the IFA develops procedures for evaluating workload on the wrist, elbow and shoulder. To newly develop an assessment procedure for the elbow load a systematic review was carried out, for instance. The activities for assessing the shoulder load are also part of the PEROSH joint research project 'PEROSH recommendations for procedures to measure occupational physical activity and workload' having one focus on the assessment of upper arm elevation at work with technical systems.[2] Within the framework of a joint project of the Federal Institute for Occupational Safety and Health (BAuA) and the German Social Accident Insurance (DGUV) (MEGAPHYS – multilevel risk assessment of physical workload) it is intended to use the IFA assessment procedures for about 120 workplaces where the physical workload was measured by CUELA. The workload data is for example to be correlated with subjectively perceived strain and complaint data from questionnaires, interviews and physical examinations collected from about 1000 employees.

REFERENCES

1. Ellegast R, Hermanns I, Schiefer C. Workload assessment in field using the ambulatory CUELA system. In (Duffy VG ed.). *Second International Conference on Digital Human Modelling – ICDHM 2009: Held as Part of HCI International* 2009 July 19–24. San Diego. Berlin: Springer:221–6.
2. http://www.perosh.eu/research-projects/perosh-projects/perosh-recommendations-for-procedures-to-measure-occupational-physical-activity-and-workload/

805 MUSCULOSKELETAL COMPLAINTS AMONG OFFICE WORKERS: COMPLEMENTARY ROLE OF PHYSICAL, PSYCHOSOCIAL AND ENVIRONMENTAL JOB DEMANDS AND RESOURCES

[1,2]Liesbeth Daenen*, [1,3]Tinne Vander Elst, [1]Veerle Hermans, [1]Chris Verbeek, [1]David Verwimp, [1,4]Lode Godderis. *[1]Knowledge, Information and Research Centre, Group IDEWE (External Service for Prevention and Protection at Work), Louvain, Belgium; [2]Department of Rehabilitation Sciences and Physiotherapy, Human Physiology and Anatomy (KIMA), Faculty of Physical Education and Physiotherapy, Vrije Universiteit Brussel, Brussels, Belgium; [3]Research Group Work, Organisational and Personnel Psychology, Faculty of Psychology and Educational Science, KU Leuven, Louvain, Belgium; [4]Environment and Health, Faculty of Medicine, KU Leuven, Louvain, Belgium*

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Introduction Work-related musculoskeletal disorders (WMRDs) are the most important causes of work disability and long-term absenteeism among office workers. A wide range of risk factors of physical, psychosocial and environmental nature has been identified, but the question remains as to which degree these factors contribute to WMRDs and which explanatory mechanism underlies this relationship. Therefore, an integrated model corresponding to the scientific literature and the Job Demands-Resources model was used to examine (1) the effects of both job demands (e.g. workload, prolonged sitting, glare/reflection) and job resources (e.g. social support, accurate workplace settings) on WMRDs and (2) the mediating role of emotional exhaustion and cognitive stress complaints in the relationship between these job demands/resources and WMRDs in office workers.

Methods Thousand office workers from several Belgian companies participated in the study. They were asked to fill out a structured online questionnaire including socio-demographic characteristics, work-specific factors and job demands/resources covering four work-related domains (i.e. work experience, workstation, work environment and movement). Path analysis by means of Mplus 7.4 was conducted to test the hypotheses.

Results Most commonly reported complaints were located in the back (48%) and neck (34%). Multiple direct effects were found between measured job demands/resources and WMRDs, but only lower levels of social support predicted self-reported pain at all body regions ($p<0.05$). Regarding the indirect effects, emotional exhaustion was the most important mediator as it mediated the relationships between workload, noise, social support, autonomy, and WMRDs (k^2 values from 0.02 to 0.07).

Discussion The results indicate that (1) physical, environmental as well as psychosocial job demands/resources are related to WRMDs and (2) emotional exhaustion is an important explanation. These association and mediation patterns suggest opportunities for intervention strategies in order to stimulate accurate workplace settings, improve work experience (with special attention to social support) and prevent emotional exhaustion.