

Poster Presentation

Musculoskeletal

0080

MEASUREMENT OF PHYSIOLOGICAL WORKLOAD AND MUSCULOSKELETAL FATIGUE AMONG NURSING ATTENDANTS IN TAIWAN

Pi-Min Shih, Shih-Yi Lu, Yen-Hui Lin*. *Department of Occupational Safety and Health, Chung Shan Medical University, Taichung city, Taiwan*

10.1136/oemed-2017-104636.59

Introduction During the process of caring for patients, nursing attendants frequently require to help patients with lifting/transferring, patting/turning and rehabilitation. Nursing attendants are required to exert forceful and awkward postures for extended periods of time that caused musculoskeletal disorders. This study is to survey the work situation, physiological workloads, and musculoskeletal disorders associated with prolonged nursing attendance tasks in nursing attendants.

Method The self-administered questionnaires are assessed via a cross-sectional study of 190 female workers in Taiwan. Information is obtained on demographics, job characteristics, health status, and physiological workload.

Results and Discussion The observational result shows that the most common prevalence of physical discomfort was lower back (69.5%), followed by right shoulder (47.9%), left shoulder (44.2%), and neck (37.9%). Meanwhile, the most pronounced tired is to help patients with lifting/transferring (79.2%), followed by patting/turning (55.1%). The anticipated results of this study could be a workplace task design reference for improvement of musculoskeletal fatigue and disorders among nursing attendants.

Poster Presentation

Respiratory

0081

CHANGE IN RESPIRATORY HEAT FLOWS IN RESPONSE TO WEARING HALF-MASK RESPIRATORS IN HOT-AND-HUMID ENVIRONMENT

¹Chen-Peng Chen*, ²Yi-Chun Lin, ¹Hui-Chen Wei. *¹Department of Occupational Safety and Health, China Medical University, Taichung, Taiwan; ²Department of Public Health, China Medical University, Taichung, Taiwan*

10.1136/oemed-2017-104636.60

Objectives When using a respirator a microenvironment develops around the nasal cavity. The heat load in this microenvironment deviates from that in the ambient air, shifting the paradigm of metabolic heat transfer via respiratory heat flows. This study determined the change in respiratory heat flows among users of half-mask respirators under different thermal conditions.

Methods Twenty-five participants (13 males and 12 females) were required to wear two models of half-mask respirators (one filtering facepiece without exhalation valve and one elastomeric facepiece with valve) and walked on stairs (130–200 W/m²) for 30 min in a climatic chamber. Combinations of air temperature (25, 29, and 33°C) and relative humidity (55% and 75%) were applied to develop various levels of heat stress.

Results The temperature of the respired air taken inside the filtering facepiece was greater than the level inside the elastomeric facepiece. Using the ISO/TS 16976–5 model, a reduction in the respiratory convective and evaporative heat flows was observed when the heat load in the ambient air was raised ($R^2=0.447$ and 0.470 , respectively). The difference between the respiratory heat flow via convection and that via evaporation decreased as the heat stress from the ambient air increased when the filtering facepiece was used (0.721).

Conclusions The metabolic heat built up in the microenvironment inside a respirator without an exhalation valve could alter the development of respiratory heat flows. Caution should be exercised to prevent imbalance in thermoregulation when using these respirators in hot-and-humid conditions.

Poster Presentation

Other

0083

MARKET VARIABILITY- SAFETY FLUCTUATIONS. MINERAL PRICES AND OHS AMONG BOLIVIAN COOPERATIVE MINERS

Mei Trueba. *University of Sussex, Brighton, UK*

10.1136/oemed-2017-104636.61

Drawing on a combination of quantitative and ethnographic data this presentation explores the relationship between commodity prices and work-related injuries and fatalities among Bolivian cooperative miners. The presentation describes the short term health and safety impacts of rises and falls in mineral prices together with their complex pathways of influence before analysing the long term OHS impacts of market variability. Inviting reflection about the role of global trade relations and interdependencies in shaping workplace health and safety this presentation demonstrates that a focus on exposure assessment calculations and workplace interventions is not enough for improving OHS. I suggest that greater attention is to be paid to understanding the macro-economic determinants of OHS in order to identify locally-relevant policy points of action.

Poster Presentation

Policy/Impact

0084

OVERWORK AND ITS IMPACT ON WORKERS' HEALTH: A CROSS-COUNTRY COMPARISON OF OVERWORK-RELATED CARDIOVASCULAR MORTALITIES AND ITS REFLECTION IN THE TAIWANESE SITUATION

¹Cheng-Kuan Lin*, ²Ro-Ting Lin. *¹Harvard T.H. Chan School of Public Health, Boston, MA, USA; ²China Medical University, Taichung, Taiwan*

10.1136/oemed-2017-104636.62

Many Asian countries experienced the rapid change in industrial structure, which has resulted in a notable increase in occupational diseases, particularly overwork-related cardiovascular diseases (CVDs). "Overwork" or "Karoshi" has since been a major