

ABSTRACT OF THESIS

RELIABILITY OF OBSERVATIONAL POSTURE ASSESSMENT USING MULTIMEDIA VIDEO TASK ANALYSIS

Reliable exposure measurements are necessary to establish causal relationships between occupational risk factors and health outcomes. Unreliable exposure methods due to random error may over or underestimate the risk of health outcomes. The National Institute for Occupational Safety and Health (NIOSH, 1997) and the National Research Council (NRC/IOM, 2001) have both called for improved methods to assess risk factor exposure in occupational health studies.

This study evaluated the inter- and intra-rater reliability of assessing worker posture during manufacturing tasks using Multimedia Video Task Analysis (MYTA), a relatively new exposure assessment tool. Posture of the neck, shoulder, and wrist of 20 manufacturing employees was evaluated by two raters from digital video footage of employees. Inter- and intra-rater reliability were estimated for all posture categories evaluated. Generalizability theory was used to estimate the inter- and intra-rater reliability. Inter-rater reliability results demonstrated good to excellent reliability for neck and shoulder postures and fair to excellent reliability for wrist postures. Intra-rater reliability results demonstrated good to excellent reliability for both raters evaluating all postures of the neck, shoulder, and wrist.

This study demonstrated that MVTA is a reliable method to assess worker posture. Additional studies are needed to demonstrate the validity of this exposure assessment tool.

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Fall 2005