

## Ratings of Hand Activity and Force Levels in Identical Hand-Intensive Work Tasks in Women and Men

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**Abstract :** Background: Accuracy of risk assessment tools in hand-repetitive work is important. This can support precision in the risk management process and for a sustainable working life for women and men equally. Musculoskeletal disorders, MSDs, from the hand, wrist, and forearm, are common in the working population. Women report a higher prevalence of MSDs in these regions. Objective: The objective of this study was to compare if women and men who performed the identical hand-intensive work task were rated equally using the Hand Activity Threshold Limit Value® (HA-TLV) when self-rated and observer-rated. Method: Fifty-six workers from eight companies participated, with various intensities in hand-repetitive work tasks. In total, 18 unique identical hand-intensive work tasks were executed in 28 pairs of a woman and a man. Hand activity and force levels were assessed. Each worker executed the work task for 15 minutes, which was also video recorded. Data was collected on workers who self-rated directly after the execution of the work task. Also, experienced observers performed ratings from videos of the same work tasks. For comparing means between women and men, paired samples t-tests were used. Results: The main results showed that there was no difference in self-ratings of hand activity level and force by women and men who executed the same work task. Further, there was no difference between observer ratings of hand activity level. However, the observer force ratings of women and men differed significantly ( $p=0.01$ ). Conclusion: Hand activity and force levels are rated equally in women and men when self-rated, also by observers for hand activity. However, it is an observandum that observer force rating is rated higher for women and lower for men. This indicates the need of comparing force ratings with technical measures.

**Keywords :** gender, equity, sex differences, repetitive strain injury, cumulative trauma disorders, upper extremity, exposure assessment, workload, health risk assessment, observation, psychophysics

**Conference Title :** ICPEHF 2023 : International Conference on Physical Ergonomics and Human Factors

**Conference Location :** Rome, Italy

**Conference Dates :** July 17-18, 2023