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The effect of idle time thresholds on computer use time estimations by electronic monitoring

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Abstract

This study examined the effect of idle time setting on the estimation of computer use times by electronic activity monitoring and validated its use by comparing it with video record observations. Twenty-four study subjects were recruited and their work with computers was monitored for 1 h. With the estimates by video record observation as references, the best idle time settings for electronic activity monitoring with the least relative errors were 25, 2.5 and 2.5 s, respectively, for total computer, keyboard and mouse use time estimations. These estimates were highly correlated with the corresponding references ($r = 0.918–0.964$, $p < 0.0001$), accompanied by limited mean estimate differences ranging from −3.0 ± 2.8% to 1.3 ± 1.6%. The estimates by self-report were moderately correlated with the corresponding references ($r = 0.387–0.678$), with greater mean estimate differences. This study concluded that, for electronic

activity monitoring methods, the most appropriate thresholds for idle time setting are 25 s, 2.5 s and 2.5 s for total computer, keyboard and mouse use time estimates, respectively. This method may help evaluate physical work-loading with computer works through a large-scale epidemiological study.

Keywords:

electronic activity monitoring | computer work | computer mouse | keyboard | video record observation

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