Evaluation of correlation in two job analysis techniques of QEC and Ergo-easer

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The purpose of this paper is to study the results of two evaluating techniques: *QEC* (Quick Exposure Checklist) and *Ergo-easer* used in the assessment of physical load in the musculoskeletal system at work sites of a battery manufacturing company in Iran.

Work-related musculoskeletal disease (WMSDs) is estimated as the most common occupational disorder in Iran. It is a necessity to find quick, easy-to-use and valid technique to assess exposure risks relating to WMSD in Iran. The effort has been to find out the new method (QEC) would substitute currently in used method (ergo-easer) and the new method (QEC) has the advantage of being faster and easier to use by health practitioners.

Design: Analytical (cross sectional)

Setting: 26 assembling workstations in a battery manufacturing company have been assessed. The data collection was carried by observation techniques and interviews. The results were analyzed by SPSS-10.

Research hypothesis:

1) There is a significant correlation between work site-total-score in two methods (Significant correlation in critical work site diagnosing)
2) No significant difference could be found between two methods in diagnosing the most vulnerable and critical target joint.

First the total scores of two methods were compared. Indices were:

QEC (Mean=116.5, SD=28.5, C.v.=0.25)
Ergo-easer (Mean=1.7, SD=1.2, C.v.=0.71)

Pearson's correlation coefficient was calculated as r=0.86 (P<0.001). Then all joints scores were assessed. Among them "Back "was defined as "critical joint" in most work sites. Work sites were evaluated by coding each, on the basis of diagnosing the back as critical joint by each method. The Chi-square test procedure (Mc.nemar) was used for data analyzing. No significant difference was observed. On the basis of above-mentioned result there is a significant correlation between two techniques (r= 86%, P-value: 0.001) in diagnosis the critical work site and no significant difference in distinguishing the critical target organ. This study indicates that:

1) These two methods have a strong correlation in identifying critical work site.
2) No significant difference was seen in determining critical joint between two methods. Results achieved in QEC are more harmoniously than Ergo-easer.

As QEC is learnt and practiced faster and simpler than Ergo-easer and utmost other techniques, this method is recommended for utilizing in industries in the assessment of exposure risks relating to WMSD.
The new method (QEC) has the advantage of being faster and easier to use by health practitioners.