EFFECTS OF A QUASI-EXPERIMENTAL FIELD OFFICE ERGONOMICS INTERVENTION STUDY

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With the extensive use of computers in the workplace and the associated increase of risk in musculoskeletal symptoms among computer workers, concerns have been raised over these workers' safety and health. An office ergonomics training and workplace design intervention study was undertaken at a large U.S. consulting accounting firm to investigate effects on workers' knowledge, job control, ergonomic climate, self-reported musculoskeletal discomfort, and performance. It was hypothesized that the training and workplace intervention would allow the workers to more effectively use their workspace through increased office ergonomics knowledge and skills, and this would translate into healthier computing behaviors, reduced work-related musculoskeletal discomforts (WMSDs), greater sense of job control, and improved performance. A longitudinal, quasi-experimental study was conducted with three groups: 1) "Control" group: did not receive a new workspace nor training; 2) "Workstation-only (WS-only):" received the new experimental, flexible workspace; and 3) "Workstation + Training (WS+T):" received both the new workspace and office ergonomics training. Survey data were collected simultaneously from all three groups over three time periods: 2 months pre-intervention and 3 and 8 months post-intervention. A business process analyses (BPA) mapping method to track the time and cost related to four ongoing internal business processes was conducted for each work group to measure their unit performance. Out of the 1250 invited participants, 642 responded to the baseline, pre-intervention survey, for a response rate of 51% for Time 1; Time 2 (n=512), and Time 3 (n=375). A significant reduction in the overall rated body discomfort was found for both the WS-only and WS+T groups over time, compared to the control group ($p<.05$). The WS+T group showed a greater significant reduction in overall body discomfort compared to the WS-only group at Time 3 ($p<.05$). Results of the self-reported job control questions revealed a significant interaction as well as overall group differences ($p's<.05$). The business process analysis revealed that both intervention groups demonstrated positive effects on quantitative measures of organizational output representing a reduction in time required to complete the business processes (.46% control; 5.62% WS-only; 10.55% WS+T). Overall, positive and significant results were observed over time for both experimental groups compared to the control group. A greater sense of job control, awareness of ergonomics polices and practices were observed for the WS+T group, suggesting that these participants responded favorably to the workplace design and ergonomics training intervention. The continued reduction of WMSDs over time for the WS+T group suggests that providing ergonomics skills, in the form of training, allows individuals to continue to make appropriate workstation changes, subsequently reducing the musculoskeletal discomfort associated with computer work.

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