Literature Review

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Literature Review

With a reliance on computer technology in the United States workplace, an increase in lower back pain among office workers has also followed. The shift in prolonged sitting and stagnant body movements has become a major concern as workers compensation claims increase and worker productivity decreases. As technology will continue to be used in workplaces, a shift in how office workers perform daily tasks and cope with musculoskeletal discomfort must be evaluated. To this regard numerous studies and surveys have been performed to characterize a correlation between musculoskeletal symptoms and the effects of alternating work positions, resulting in decreased occurrences of lower back pain.

For example, the extensive body of literature comparing musculoskeletal symptoms of the lower back and prolonged sitting exemplifies the importance of movement patterns, coping mechanisms, and ergonomic interventions for office workers performing computer-related tasks (see Dunk & Callaghan, 2010; Husemann et al., 2009; Janwantanakul et al., 2011; Larsman et al., 2009; Leyshon et al., 2010; Makhsous et al., 2009; Oztug & Cowie, 2011). This literature shows that a wide range of work-related risk factors including postural response, accumulated computer use, cognitive and behavioral strategies that correlate
to musculoskeletal discomfort among office workers, when limited changes in positioning occurs.

As Janwantanakul et al. (2011) indicates, a good deal of research shows that “persons under 45 years of age are at the greatest risk of work-related disability when sitting for more than half a work day.” Similarly among individuals with no history of lower back pain, Dunk & Callaghan (2010) found that lower back discomfort increases with prolonged seated exposure. Their research found “that large changes in posture are a good indicator of the presence of discomfort when lower back pain is suffered. Thus, it is possible that proactively inducing movement may be more beneficial that self-selected movement” (2010, p. 12).

In addition, a good deal of research points to musculoskeletal pain and the coping mechanism used. Oztug (2011) and Husemann (2009), for example, show that cognitive and behavioral strategies used by office workers can have a direct impact on musculoskeletal pain in the workplace if managed correctly. This included worker distraction, blocking thoughts, rotation of sitting and standing work periods, and a reduction of sedentary work.

The benefits of ergonomic intervention also pointed to decreased occurrences of musculoskeletal disorders in office workers. Leyshon et al. (2010) found through systematic review
that workstation redesign (e.g., varying work positions, keyboard placement, alternative mouse use, and ergonomic chairs) had a significant improvement on worker comfort. Furthermore, Makhsous et al. (2009) found that increased sitting comfort, that reduced the spinal load and low back muscle activities, lessened lower back pain risk.

As the workplace continues to evolve technologically, so does the increased frequency of musculoskeletal discomfort in office workers. Therefore, an importance rests on continued study into the link between discomfort and computer-related tasks, but also the interventions office workers can use to eliminate pain. The question becomes, when alternating a sit and stand position while performing data entry work, eight or more hours a day, will female office workers have fewer lower back pain complaints than those who sit only?
References


