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The Efficacy of a Universal Intervention in Reducing Biomechanical Workloads of Hospital Nurses

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Introduction: Hospital Nurses have a high risk of developing work related musculoskeletal disorders (WRMSD) largely due to heavy biomechanical loads. WRMSD hinders ones ability to complete work related tasks, lowers the quality of the task performed, and causes increase in absences. Previous articles related to Ergonomic interventions for hospital nurses mainly focused on lifting and transferring patients, lacking research of ergonomic examination and solution which include all of the nurses' tasks specific to each ward.

Objective: The present article researched the efficacy of using an all inclusive ergonomic intervention in order to reduce biomechanical related injuries of hospital nurses and its effect on the incidence of nurses' musculoskeletal complaints.

Methods: Thirty-one nurses from Meir Hospital in Kfar Sava participated in the research, 14 in the trial group and 17 in the control group. Each nurse's average work related biomechanical loads were examined using the Rapid Entire Body Assessment (REBA) which calculates load according to activity specific postures and weight. In addition the nurses filled forms regarding their bio-demographics and answered questionnaires regarding their musculoskeletal complaints. The control group received instructional brochures regarding exercises and proper task-related postural guidelines immediately after the initial assessments. Three months following initial assessment, the control group received again the brochures and the trial group received three 45 minute sessions of specific ergonomic intervention which included relevant exercises specific to their tasks. Six months from the initial assessment a final exam using REBA was performed and a follow up questionnaire regarding their musculoskeletal complaints was given to all precipitants.

Results: The trial group reduced their biomechanical loads by 28.5% . However there was statistically no difference between the groups regarding musculoskeletal complaints.

Conclusion: A universal intervention does in fact reduce biomechanical work loads of hospital nurses. There is justification to examine the long-term effects of work postural changes and their relevant musculoskeletal complaints.

Contribution to the practice/evidence base of occupational therapy: The intervention program used motor learning processes while considering ergonomic principles. It is our view that the motor learning process modified nurses behavior and lead to improved working habits that reduced biomechanical workload.