ABSTRACT

**Background:** Work urgency, accuracy and demands compel the computer professionals to spend longer hours before computers without giving importance to their health, especially body weight. Increase of body weight leads to improper Body Mass Index (BMI), which may result in altered posture (standing & work sitting), reduce flexibility, aggravate work related musculoskeletal discomfort and occupational-psychosocial stress. The objective of the study was to find out the effect of BMI on psycho-physical health (posture, flexibility, work related musculoskeletal discomforts and occupational stress of computer workers in a developed ergonomic setup.

**Methods:** A descriptive inferential study has been taken to analyze the effect of BMI on posture, flexibility, work related musculoskeletal discomfort and occupational-psychosocial stress. A total of 500 computer workers, aged 25-35 years were randomly selected from a Software and a BPO company in Bangalore city, India for the participation in this study. Ergonomic design, anthropometric data and OSHA eTool - evaluation checklist was used for confirmation of developed ergonomic setup. BMI was calculated by taking the ratio of the subject’s height (in meter) and weight (in kilogram). Standing posture was assessed with the help of plumb bob passing the line (Kendal 1993, Kerrie 2006) in lateral and posterior aspect of the body finding the correct (YES) or faulty (NO) posture taken for the calculation. Dynamic (work sitting) posture was checked with observation during the work (two to six working hours of the day) by using the RULA (Rapid Upper Limb Assessment) employee
assessment worksheet (Lynn and Nigel 1993). Flexibility of lower back and hamstring muscles was assessed by modified sit and reach test score (Tsang and Mak 2004) using a sit-and-reach test box and the score was taken for the consideration. Work related musculoskeletal discomfort and occupational stress of the subjects was assessed by Cornell University’s musculoskeletal discomfort questionnaire (CMDQ) and occupational stress index (OSI) respectively as well as a relationship was checked with their BMI.

**Results:** A significant association (p<0.001) has been found among high BMI subjects with their increase scores of work posture, musculoskeletal discomfort, occupational stress and decrease score of body flexibility.

**Conclusion:** from this study, it has been concluded that, there is a significant effect of BMI in increasing of work posture, work related musculoskeletal discomfort, occupational-psychosocial stress and decreasing of body flexibility among computer workers in a developed ergonomic setup.

Key words: Body mass index, work posture, body flexibility, work related musculoskeletal discomforts, occupational stress, developed ergonomic setup.