

Evaluation of two ergonomics intervention programs in reducing ergonomic risk factors of musculoskeletal disorder among school children.

ABSTRACT

An intervention study was done from February 2009 until August 2009 with the objective of investigating the effectiveness of two ergonomics intervention programs in reducing ergonomic risk factors among 229 school children in 2nd Grade (age 8 years) and 5th Grade (age 11 years) in three schools. Group 1 (G1) assigned to one school, which implemented the ergonomically design furniture in their class (among 2nd and 5th grade students), Group 2 (G2) from other school implemented ergonomics program with intensive health promotion toward ergonomic awareness consisted with exercising and education to reduce MSD, while Group 3 from another school selected as Control Group (Cx). Musculoskeletal symptoms were recorded using modified nordiq body map questionnaires. Modified Rapid Upper Limb Assessment (RULA) was used to assess the awkward posture of the school children. Ergonomic awareness test performed namely Ergonomic Quiz (EQ) to evaluate the awareness level before and after ergonomic intervention programs. Tanita weight measurement was used to measure school bag weight and students' weight. Weight of the bag, RULA score and EQ were used as main indicator to analyze the effectiveness of programs to reduce ergonomic risks. A significant reduction of RULA score among sub-sample students and mean bag weight observed among G1<G2 and Cx indicate the ergonomic risk were reduce accordingly. Higher EQ score recorded among G1 students compared to G2 and Cx but the result were insignificant. The implementation of ergonomically design furniture in classroom able to reduce risk and reported MSD symptoms.

Keyword: Bag weight; Ergonomic intervention programs; Ergonomic quiz; Musculoskeletal disorder (MSD); Rapid upper limb assessment (RULA); School children.