

## **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 (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 towards ergonomics awareness consisted with exercising and education to reduced MSD, while Group 3 (G3) 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. Ergonomics awareness test performed namely Ergonomics Quiz (EQ) to evaluate the awareness level before and after ergonomic intervention programs. Tanita weighth measurement was used to measure school bag weight and student's weight. Weight of the bag, RULA score and EQ were used as main indicator to analyze the effectiveness of the program tp 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:** School children; Musculoskeletal disorder (MSD); Rapid upper limb assessment (RULA); Ergonomic intervention programs; Bag weight; Ergonomic quiz.