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## Are the Criteria for Health and Safety Available in Adjustable Saudi School Furniture?

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### ABSTRACT

This research investigated the effect of adjustable Saudi chair-table combinations available in the local market on the students' health and safety. Thirty seven young students participated in this research. Ten chair-table combinations, within three different activities (reading, writing, and looking at the blackboard), were the independent variables. Normalized discomfort ratings, and neck dorsal and upper trapezius muscular activities were the dependent variables. Variances among students' body dimensions and classroom furniture were also studied. There were higher levels of neck dorsal and upper trapezius muscular contractions associated with less dimensions of chair-table combinations compared to high dimensions of chair-table combinations. Normalized discomfort ratings at the neck, shoulder, thigh, and feet were significantly higher at high chair-table dimensions. Matched school furniture to the student dimensions was associated with low dimensions of chair-table combinations. The suitability of the local adjustable chair-table combination was not fit to the students' health. Saudi furniture industry should review and provide the local schools with the most appropriate furniture to Saudi students' anthropometric dimensions.

### KEYWORDS

School Furniture, Discomfort Scale, Human Factors, EMG, Furniture Design, Anthropometry

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