

Smart Ergonomic Scoliosis Preventer (SESP)

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Abstract—Scoliosis, a lateral curvature of the spine, is the most frequent deformity of the spinal column. It is additionally aggravated by the inadequate environmental conditions in schools, such as unadjusted furniture, teaching aids and most of all, school bag and bad lighting. Kementerian Kesihatan Malaysia (KKM) has warned parents to pay attention to their children if they seem to be developing an early onset of scoliosis such as child have a slight uneven shoulder level, a prominent hip to side, a rib hump due to the deformed ribs, or imbalanced musculature formation. These are the common symptoms for scoliosis. Scoliosis among children has never been widely been studied in Malaysia, but with a 2017 study done by the Malaysian Orthopedic Association in school children, has estimated roughly 2-5% of school children are prone to having mild or greater scoliosis, with warning that girls of 11-14 are at higher risk of developing scoliosis. Sitting posture is one of the factors which cause the children to experience the scoliosis at early age. Finding scoliosis early is important for treatment. If left untreated it can cause a lot health issues. However, there are minimal number of equipment or tool available for use which can alert us on our wrong sitting posture. Some existing tools are very expensive and many not affordable enough to be bought. The aim of this project is to design an ergonomic chair which can minimize the health problems by alarming the person to fix his/her sitting posture.

Keywords—*Scoliosis, posture, ergonomic chair, school children, health*