

## EDITORIAL

# WEIGHT OF KNOWLEDGE – A CONCERN FOR THE ADOLESCENT

Knowledge empowers man to attain success, power and position in life and it enables one to find the difference between right and wrong, good and bad. It helps to overcome the weakness and faults, face dangers and difficulties with courage and confidence. It also gives mental, moral and spiritual advancement. There is no doubt that knowledge is a key to success but physical strength and well being is essential to enjoy the achievement.

Is knowledge over the cost of physical health worth it? Books that enclose this knowledge are the main reasons behind the excessive weight of the school bags that the children carry on their back. Hence, it is comprehensible that the weight of knowledge is a nationwide concern, especially for the adolescents that needs to be addressed. A growing number of adolescents have begun to complain of musculoskeletal problem which is a result of their sedentary lifestyle, heavy school bags, bad posture and poor ergonomics at their schools and homes. Unfortunately, our schooling system has failed to understand the short and long term harmful effects of this practice such as making the young children carry heavy bags. Another dilemma that we face today is that the teachers are not specific regarding their daily class work which makes the child carry all the text and note books to school every day. According to international standards, the weight of a school bag must be approximately 10% of the carrier's body weight. For instance if a child weighs about 80 pounds, the back pack should not weigh more than 8 to 12 pounds.

When a back pack is too heavy it tends to put extra pressure on the shoulders which may forcefully pull a child backward or bend forward. In both conditions, the child will alter his/her posture at the level of hips or arch of back to compensate the undue load that causes unnatural compression of the spine. Bones of adolescents contain growth plates which consist of multiplying cartilage cells that grow in length, and then change into hard, mineralized bone. Poor postures and over load on the spine is resulting in modification of the spinal curvature as well as several other musculoskeletal problems including scoliosis, kyphosis, shoulder, neck and back pain/spasms.

In a countrywide survey conducted by the Associated Chambers of Commerce and Industry of India (ASSOCHAM) in 2012 on "heavy school bags causing children severe back pain" has revealed that nearly 58% of children below the age of 10 are suffering from mild back pain, which can develop into chronic pain and later into kyphosis. Apart from this, many other researchers have revealed strong correlation between school bag weight and physical problems among all students which can result in serious consequences in the future.

Therefore, the American Academy of Pediatrics (AAP) recommends a light weight bag with two wide padded shoulder straps for the children that will help them maintain their correct posture without adding excessive load on their spine. To reduce the weight of the bags carried by children, internationally almost all schools provide them with cabinets and lockers where they can keep the extra books and maintain a lighter school bag.

Children spend over almost 30% of their time at school which may include sessions of prolonged sittings. Therefore, the classroom furniture where these children spend most of their time writing or studying should be designed according to the ergonomic standards to ensure that they do not experience back pain or any other musculoskeletal disorders.

Students should be taught about the posture while sitting and working on their desk as well as how to carry their bags. Every effort should be made to ensure that young children do not experience back pain and other musculoskeletal disorders due to heavy school bags and inadequately designed classroom furniture.

As 'with great powers comes great responsibility' so it is essential we have the power to highlight concerning issues and bring awareness in our society through literature, media and social networking. It is time to take the responsibility and bring the change. This is just an effort to propose a methodology and guideline for the awareness of the consequences of heavy school bags carried by children and the extreme cost which may not be felt at this time but serious damage may be seen in a longer run.

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