Abstract

Musculoskeletal pain affects approximately 10-80% of the school-going adolescents world-wide, causing disabilities among them. Because of its nature, children may suffer quietly without informing caregivers or seeking medical care. A wide spectrum of contributory factors has been identified by researchers. Baseline information is necessary to estimate the extent of the problem, identify modifiable contributory factors and sensitize relevant stakeholders to contemplate on preventive strategies.

The present study was carried out to determine the prevalence of musculoskeletal pain and contributory factors among school children. It also intended to describe the association between the selected contributory factors and the presence of recurrent musculoskeletal pain.

The study included three components; a validation study to develop and validate an instrument to assess musculoskeletal pain among school children, a prevalence study and a descriptive comparative study. The study was carried out among school children of 11 -13 years age group in the district of Gampaha. A stratified multistage cluster sampling method was applied in selecting the study population for the prevalence study.

The study revealed that Adolescent Musculoskeletal Pain Questionnaire (AMPAQ) is a valid tool to assess musculoskeletal pain among school children 11 years and over and this formed the basis for the Tool for Assessment of Musculoskeletal Pain among Schoolchilden (TAMPS) which was used in this study.

The prevalence of musculoskeletal pain among school children was 71.2%. Prevalence rates for acute, one-time and recurrent pain categories were 19%, 16.2% and 35.9% respectively.

The associations if any, of a number of factors related to: physical characteristics of the school children, features related to carriage of books and amenities, arrangements in the classroom, physical activities, psychosocial factors and ergonomic background were studied.

Females (1.43) and students from urban schools (1.2) reported high risk of recurrent musculoskeletal pain. Of the physical characteristics, taller stature and heavier weight were associated with a higher risk of recurrent pain.

A majority (80%) of the school children carried their amenities in a backpack. About 97.1% of the students carried the backpack on both shoulders. A waist-belt was present in 30% of backpacks and 30.5% students used the waist-belt. Carrying the backpack over both shoulder (OR=0.06 CI:0.03-0.12) and proper use of waist belt (OR=0.57 CI:0.34—0.98) were shown to lower the risk of recurrent musculoskeletal pain. Other factors showed no association.

The mean weight of the bag was 3.72 Kg (11.04% of the body weight) which was higher than the internationally recommended cut-off of 10%. Carrying distance of the bag was associated with recurrent musculoskeletal pain.

None of the classrooms studied had provisions for storage facilities for bags or other amenities. Even though 23% of the students had to turn their necks by > 45 degrees to see the blackboard and the mean distance to blackboard was high (398.04 cm), none of these factors were associated with musculoskeletal pain.

Approximately 80-87% chairs did not match with body dimensions of students. Mismatched seat depth - buttock-popliteal length found to be associated with a 1.65 times risk (95% CI: 1.070-2.532) of recurrent pain. Only 12% students used the backrest and it lowered the risk of recurrent pain (OR = 0.55 CI:0.37-0.81). A majority (78.3%) of the students was provided with individual desks. In 84.9% desk surface was horizontal and 82% desks had a foot-rest. Mismatched legroom height - popliteal height was found in 76.3%. Despite, a higher proportion (94.7%) perceived high comfort in chairs. Children who perceived low comfort, reported recurrent musculoskeletal pain more frequently (p=0.006).

Engaging in sports and related physical activities, watching television more than 2 hours per day, walking to the school and use of multiple traveling modes were associated with occurrence of recurrent musculoskeletal pain. The risk of reporting recurrent pain was higher among those who indicated a high level of general tiredness. A majority (81.5%) of students

slept on a bed with a mattress and it lowered the risk of recurrent pain (OR=0.67 CI:0.46-0.97).

Functional disabilities (2.41), knowing of a person with similar pain (1.97), abnormal total disability score (2.02), abnormal emotional score (2.29) and abnormal hyperactivity score (1.85) were associated with high risks of recurrent musculoskeletal pain.

Pain behaviour of the children reflected effect of musculoskeletal pain. About 82% children had pain that warranted informing somebody else. In 63%, pain necessitated at least one source of medication. Disability caused by pain on sleeping, studies, walking, physical activities and hobbies were low (14.2%). Students with recurrent pain had more disabilities. Many (>50%) students perceived their academic performance and school attendance were affected due to pain. This was not substantiated by information based on records. Postural displacements showed no difference between different pain groups.

The problem of musculoskeletal pain among school children has to be considered as a hidden problem. Many identified contributory factors were modifiable and preventive strategies should be contemplated along with health promoting school programme with a focus on behavioural change.