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Backpacks on! Schoolchildren's perceptions of load, associations with back pain and factors determining the load.

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Abstract

STUDY DESIGN: A cross-sectional study was conducted.**OBJECTIVES:** To investigate schoolchildren's subjective perceptions of their daily backpack loads, to ascertain whether an association exists between these sensations or the load itself and back pain, and to identify the school, family, and personal factors that determine the backpack load, and that might, with a view to primary prevention, be addressed with specific interventions.**SUMMARY OF BACKGROUND DATA:** Backpack carrying has been shown to constitute a considerable daily "occupational" load of the spine in schoolchildren. Although society perceives backpack carrying as a problem, the scientific community currently offers very few answers. The backpack load borne by schoolchildren exceeds, proportionally, the legal load-bearing limits set for adults, and the association with low back pain is questioned.**METHODS:** All the backpacks of the 237 year 6 children in a school catchment area of Milan were weighed on six school days. The data were analyzed in groups according to the schools and classes involved, the single children, and the days of the week. A validated questionnaire also was administered to 115 schoolchildren (54 boys and 61 girls; average age, 11.7 years) whose anthropometric characteristics and loads carried daily were known. The associations among features of backpack carrying, subjective perceptions of the load (fatigue, feeling it to be heavy, pain) and back pain (point and life prevalence) were assessed and verified.**RESULTS:** School backpacks are felt to be heavy by 79.1% of children, to cause fatigue by 65.7%, and to cause back pain by 46.1%. Fatigue during and time spent backpack carrying, but not the backpack's weight, are associated with back pain. The determining factors were found to be classes (e.g., range, 8.87-10.59 kg), days of the week (e.g., range, 5.75-12.74 kg.), and single students (e.g., range, 4.2-9.5 kg.), but not individual schools.**CONCLUSIONS:** Daily backpack carrying is a frequent cause of discomfort for schoolchildren. There is an association between this load and back pain, although the relationship is not direct. The results suggest the existence of personal physical and psychological factors that need to be investigated. Reduction of the daily backpack load borne by schoolchildren is recommended both on the basis of the current results and because it exceeds, proportionally, the legal load limits set for adults. All the different parties involved (school system, parents, children) play a role, and if the aim is to reduce this "weight of culture," all should be targeted through specific interventions. Recommendations are supplied for the achievement of this aim.

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