

## Fractures in School Going Children

Anuradha Vaman Khadilkar • Veena H. Ekbote •  
Shashi A. Chiplonkar • M. Z. Mughal •  
Vaman V. Khadilkar

Received: 28 October 2014 / Accepted: 9 February 2015 / Published online: 28 March 2015  
© Dr. K C Chaudhuri Foundation 2015

*To the Editor* : Fractures are the most common injuries during growing years; around 10 to 25 % of all pediatric injuries are fractures [1]. The WHO describes fractures as the most common category of unintentional injuries suffered by children below 15 y and requiring hospital admission in developing countries [2]. To the best of our knowledge, there are no data on prevalence of fractures in childhood in India. As a part of a nationwide multicentre study to collect anthropometric data in 2–18 y old children (July 2010 - January 2012) [3], we also collected data on history of fractures. In 9496 children, information about fractures and sports activity was collected from parents by a self administered questionnaire. Mean age of children was  $10.4 \pm 3.3$  y. In all, 9 % children (Boys: 6 %, Girls: 3 %) had suffered from at least one fracture till date. The percentage of fracture was significantly higher ( $p < 0.05$ ) in children from 10 to 14 y of age (53 % of the total fractures) than other age-groups. However, boys from 10 to 14 and 15 to 18 y of age had significantly greater ( $p < 0.05$ ) number of fractures than girls from the similar age group. Majority of children played football, basketball, volley ball, dodge ball, badminton, table tennis and cricket. The mean sports activity minutes were  $307 \pm 280$  min/wk in boys and  $216 \pm 218$  min/wk in

girls. Percentage of fractures increased with the increase in the sports activity in boys from 2 to 5, 6 to 9 and 15 to 18 y of age. High level of sports activity may increase the risk of fractures. The increased fracture incidence during adolescence may also be due to the greater rate of increase in bone area than bone mineralization during adolescence. The present study provides a valuable snapshot of fracture incidence in Indian school going children. Fracture is an important cause of morbidity and so calls for a higher quality study from all the classes of society so as to improve safety and preventive measures to avoid fractures in school going children.

**Acknowledgments** The authors are grateful for the help and support of Surabhi Kulkarni, Neha Kajale, Lavanya Parthasarathy, Archana Arya, Anjan Bhattacharya, Sanwar Agarwal, Deepa Pillay and Shamim Momin. They wish to express their sincere thanks to all the children and parents who participated in this study. They also wish to thank the school principals, teachers and school staff.

**Conflict of Interest** None.

**Source of Funding** Supported by Novo Nordisk India Pvt. Ltd. The sponsors had no involvement in study design; the collection, analysis and interpretation of data; the writing of reports; and the decision to submit the paper for publication.

---

A. V. Khadilkar (✉) • V. H. Ekbote • S. A. Chiplonkar •  
V. V. Khadilkar  
Growth and Endocrine Unit, Hirabai Cowasji Jehangir Medical  
Research Institute, Jehangir Hospital, 32 Sassoon Road,  
Pune 411 001, Maharashtra, India  
e-mail: anuradhavkhadilkar@gmail.com

M. Z. Mughal  
Department of Pediatric Endocrinology, Royal Manchester  
Children's Hospital, Manchester M13 9WL, UK

### References

1. Landin L. Epidemiology of children's fractures. *J Pediatr Orthop B*. 1997;6:79–83.
2. Hyder A, Sugerman D, Puvanachandra P, et al. Global childhood unintentional injury surveillance in four cities in developing countries: a pilot study. *Bull World Health Organ*. 2009;87:345–52.
3. Khadilkar A, Ekbote V, Chiplonkar S, et al. Waist circumference percentiles in 2–18 y old Indian children. *J Pediatr*. 2014;164:1358–62.