Reviewer's report

Title: Pattern of fractures across pediatric ages: analysis of individual and lifestyle factors.

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Reviewer: Thomas F Beattie

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Pattern of fractures across pediatric ages: analysis of individual and lifestyle factors.
Giuliana Valerio et al

Review

Despite the significant incidence of fractures in childhood, this is a topic that has not received a great deal of attention over the years. Issues with childhood injury include mechanism, precipitating factors, preventative factors and of course child protection issues. It is therefore timely to review a paper where some of these factors are addressed. The questions posed by the authors are therefore reasonable and are probably well defined.

The method chosen is a prospective review over 6 months. My own preference would be to have a much longer review because of the well known seasonal variation in fractures and the relationship with climatic change. (Macgregor, 2003) The authors comment on the sedentary aspect of the behaviours in children. This may well be related to weather issues and therefore a full year’s worth of work may be necessary. If the authors feel that there are insufficient weather changes in their environment to explain this, then this is something that needs to be commented upon. A typical reference to other sedentary lifestyle issues might include Currie C, Leven K and Todd J (2008) Health Behaviour in School-aged Children: World Health Organisation Collaboration Cross National Study (HBSC): findings from the 2006 HBSC Survey in Scotland, Child and Adolescent Health Research Unit, University of Edinburgh.

The authors have also failed to mention work by Rennie L, et al. (Injury 2007). This latter paper has a substantial amount of information on the patterns of childhood fracture by age and sex and would be an important source of information for comparison.

The authors have defined minor trauma as that of falling from <0.5m or standing height, etc. Some justification for this (e.g. Hansotti B, et al. 2005, Chalmers 1996). This latter paper by Chalmers indicated that 1.5m was the cut-off for significant injury.

One of the main issues in recurrent childhood fractures is non-accidental injury and this is not mentioned anywhere within the paper. To my mind this is a
The other details about behavioural issues and sports participation are very relevant and as I have suggested might be referenced to other papers on behaviours in children. The idea of looking at food-related calcium intake is good, and the food frequency questionnaire is a perfectly acceptable method to define this.

Statistical analysis seems appropriate.

The results are very difficult to follow in that they are presented in a very densely packed text. They are not surprising and demonstrate patterns of injury and fractures that occur in many other papers. There is good literature on injury in children indicating that pre-school children (who spend most of their time at home) get injured at home (Kirsty MacInnes; David H Stone Posted: 06/13/2008; BMC Public Health © 2008) and with school injuries are common (Stark, et al 1997). The socioeconomic status and adolescent injuries has been reported by Williams, et al 1997 and unintentional home injury in pre-school children has been related to the main carer’s educational attainment (Ramsay, et al 2003). Finally there is no mention of the incidence of injury in children with ADHD (DiScala, et al 1998). Surprisingly there is no mention of non-accidental injury in those with repeated fracture.

Taking all the above in mind, the paper does answer some questions and the information on physical activity and calcium intake are relatively new and useful data. Table 1 is over complicated and could possibly be trimmed considerably, and figures 1 and 2 don’t really contribute much to the overall paper. Most of it is contained in the results in any case.

The areas where I would wish them to concentrate on would be as follows:

1. Justify the use of only 6 months worth of data, bearing the discussion above.
2. Put some of the decisions in greater context relating to the issues identified above and the papers quoted above.
3. The results could be made easier to read and digest.
4. The discussion needs to reflect the other papers and the issues discussed above.

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Needs some language corrections before being published

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.
Declaration of competing interests:

Yes. I have been involved in research along similar lines and have had papers published on many of the areas covered in this paper.