Re: The relationship between childhood behaviour disorders and unintentional injury events

To the Editors;

In the November 2007 issue of *Paediatrics & Child Health*, Bruce et al address an important issue in their article titled "The relationship between childhood behaviour disorders and unintentional injury events". They test their hypothesis that children with behaviour disorders have an increased risk of unintentional injuries. They do this through analysis of linked administrative health and community services databases for hospital admissions, physician visits and medication prescriptions. The authors note a limitation in one of the databases used, with which I agree. Children and families represented in the Community Services Family Benefits and Pharmacare database either receive financial assistance or social work support and tend to be single-parent families with lower levels of income and education than the general population. The authors compare them with children from administrative databases that include virtually the entire population of Nova Scotia. The possible bias is that such children are at higher risk for injury for reasons having nothing to do with the presence or absence of behaviour disorders. While noting this important limitation, the authors did not adjust for it other than controlling for age and sex, nuisance variables that need to be controlled but that have no relevance to the potential biases that could account for the relationships found. This could be addressed in two ways by further analysis. The first would be to choose a control group as comparable as possible to their community services research participants. This control group could simply be children from the same Community Services database who require a prescription for another reason, for example, asthma or infection, and who do not meet their criteria for a behaviour disorder. A second, less desirable, option would be to use the province-wide health databases but match the children with behaviour disorders to controls by age, sex and socioeconomic proxies, such as postal code, a marker that is correlated with income. Odds ratios using these proposed groups would be more convincing than the reported odds ratios because the latter rely on groups being comparable for characteristics other than the presence or absence of behaviour disorders.

John C LeBlanc MD MSc FRCPC
Department of Pediatrics, Psychiatry,
Community Health and Epidemiology,
Dalhousie University, Halifax, Nova Scotia

The authors respond;

We thank Dr LeBlanc for his thoughtful letter in which he notes that low-income, low-education, single-parent families may be over-represented in the Community Services Family Benefits and Pharmacare database – a point we agree with and discussed in the limitations of the study. In our study, the database was used to identify children who had received a prescription for stimulant medication in conjunction with a diagnosis of attention-deficit hyperactivity disorder (ADHD) assigned by the physician, to address previous problems associated with the accurate diagnosis of ADHD. Research has shown that virtually all children who receive stimulant medication prescriptions have ADHD (1). Thus, the benefit of our decision to use stimulant medication prescriptions to validate ADHD is that it ensured that children assigned an ADHD diagnosis actually had ADHD. This was critically important to our study because one of the main purposes of this research was to examine children with ADHD, teasing out those with and without comorbid conduct problems. The cost of this decision was that these groups may have an over-representation of low-income, low-education, single-parent families compared with the comparison group of children. Given the central importance of distinguishing ADHD from conduct problems in our study, and noting that there is inconsistent evidence that parental status, income or education are systematically related to injuries (2) or ADHD (3,4), we believed the benefits outweighed the costs. Indeed, most comparison groups have limitations and trade-offs, including the use of children taking other medications in the Community Services Family Benefits and Pharmacare database. Follow-up analyses such as those suggested by Dr LeBlanc will be important to consider in future research aimed at achieving a better understanding of this important area of research.

Beth Bruce PhD
Faculty of Health Professions,
Susan Kirkland PhD
Department of Community Health and Epidemiology,
Department of Medicine,
Dalhousie University, Halifax, Nova Scotia

Dan Waschbusch PhD
Department of Psychology,
University at Buffalo, Buffalo, New York

REFERENCES

1. Jensen PS, Kettle L, Roper MT, et al. Are stimulants overprescribed? Treatment of ADHD in four US communities. J Am Acad Child Adolesc Psychiatry 1999;38:797-804.
2. Chen E, Matthews KA, Boyce WT. Socioeconomic differences in children's health: How and why do these relationships change with age? Psychol Bull 2002;128:295-329.
3. Ford T, Goodman R, Meltzer H. The relative importance of child, family, school and neighbourhood correlates of childhood psychiatric disorder. Soc Psychiatry Psychiatr Epidemiol 2004;39:487-96.
4. Barkley RA. Attention-Deficit Hyperactivity Disorder: A Handbook for Diagnosis and Treatment, 2nd edn. New York: Guilford Press, 1998.