

of physical activity of the subjects. Second, for each subject, there are no data about climbing history such as the amount of climbing per year, etc. Third, there are no data about factors that potentially may alter the sex ratio, such as exposure to some chemicals,<sup>5</sup> electromagnetic fields,<sup>6</sup> etc. Finally, the small sample size and thus limited power to detect differences between groups are the major limitations of the study.

#### M Saadat, M Khalili

Department of Biology, College of Sciences, Shiraz University, Iran

**Correspondence to:** M Saadat, Department of Biology, College of Sciences, Shiraz University, Shiraz 71454, Iran; saadat@susc.ac.ir

**Acknowledgements:** The authors are indebted to the participants for their close cooperation. The authors are indebted to Miss Sakineh Mahmudian and Mr. Mehdi Baniasad for their assistance during data collection.

**Funding:** This study was supported in Part by a Grant-in-Aid for Promotion of Education and Science in Shiraz University, provided by the Ministry of Sciences, Research, and Technology of Iran.

**Competing interests:** None.

**Ethics approval:** This study was approved by the institutional review board at Shiraz University.

Accepted 26 February 2009

*J Epidemiol Community Health* 2009;**63**:590–591.  
doi:10.1136/jech.2008.078824

#### REFERENCES

1. **Wheeler GD**, Wall SR, Belcastro AN, *et al.* Reduced serum testosterone and prolactin levels in male distance runners. *JAMA* 1984;**252**:514–6.
2. **Benso A**, Broglio F, Aimaretti G, *et al.* Endocrine and metabolic responses to extreme altitude and physical exercise in climbers. *Eur J Endocrinol* 2007;**157**:733–40.
3. **James WH**. Offspring sex ratio at birth as markers of paternal endocrine disruption. *Environ Res* 2006;**100**:77–85.
4. **Crawford E**, Gilmore D, James WH. Running in the family. *Nature* 1992;**357**:272.
5. **Masoudi M**, Saadat M. Altitude, latitude and sex ratio at birth in Iran. *J Epidemiol Community Health* 2007;**61**:172.
6. **Saadat M**. Offspring sex ratio in men exposed to electromagnetic fields. *J Epidemiol Community Health* 2005;**59**:339.

#### Author's response

Ayres and colleagues base their main criticisms on the inexact relationships between atmospheric emissions and personal exposures. They imply that the one was used improperly here as a poor surrogate for the other.<sup>1,2</sup> This is a serious misrepresentation. There was no such usage. The utilised data were group-properties (SMRs, social attributes, and area-wide emissions) relating to Local Authorities (LAs), not to individuals. The objectives and the analyses were concerned only with relationships between these values and not at all with such intermediate factors as stack-heights, day-to-day temperature swings, certification anomalies, multiple diagnoses or internal

pathological mechanisms. These irrelevancies sprang directly from the initial misrepresentation, and were then treated as omissions and as sources of exaggeration. These diversions may have confused some readers, and perhaps even the authors.

For example, Ayres and colleagues said that the effects of regional temperature variations were ignored, whereas grid-eastings and -northings were in fact used to standardise SMRs for climate (and other) gradients. Ayres and colleagues linked this to the use of postcodes but postcodes were not used. Their preferences for using crude mortalities to correct for LA age differences, rather than the already age-standardised values, are unclear.

The more substantive criticisms were focused on the general problem (addressed at length in the study) of reconciling the incommensurable qualities of different available data sets. For example, Ayres and colleagues claimed that urban–rural contrasts were ignored. They were not. Local Authority emissions were accumulated across equal-sized high-density zones, representing sub-populations that made majority contributions to the overall SMRs. The assembly of mapped pixel-colours in these zones was also criticised and raw grid-square emission-values were preferred. However, these values had their own problems. They were model-based rather than directly measured, they necessarily used different scales for each pollutant, and every source-type was set out separately for each pollutant, without all-source aggregation; and they were not exactly coterminous with LA boundaries. The availability of already processed colour-coded values was therefore very welcome and there were no obvious benefits to be had from re-working. Contrary to claims by Ayres and colleagues, there was no evidence of a subjective bias.

Ayres and colleagues approved of social standardisation but disapproved of the technique and would have preferred something more 'robust': perhaps a formal multivariate analysis? The chief problem here was the huge complexity of the relationships within and between all three main data sets (as demonstrated), and the need to examine many dependent variables. The only feasible first approach was a stepwise dissection. This showed clearly that most of the simple disease associations were socially mediated, and that independently valid correlations existed for only a small group of diseases. However, these diseases showed strong parallels with the excess mortalities of the major smog disasters and were clearly related to the respiratory-toxic properties of the significant pollutants.

#### E G Knox

**Correspondence to:** E G Knox, Mill Cottage, Great Comberton, WR10 3DU/UK; E.G.Knox@btinternet.com

**Competing interests:** None.

Accepted 18 March 2009

*J Epidemiol Community Health* 2009;**63**:591.  
doi:10.1136/jech.2009.089045

#### REFERENCES

1. **Knox EG**. Atmospheric pollutants and mortalities in English local authority areas. *J Epidemiol Community Health* 2008;**62**:442–7.
2. **Ayres J**, Propper C, Janke K, *et al.* Atmospheric pollutants and mortalities in English local authority areas. Letter. *J Epidemiol Community Health* 2009;**63**:173.

#### BOOK REVIEW

### Injury Epidemiology: Research and Control Strategies, 3rd edition

Edited by Leon S Robertson. Published by Oxford University Press, Oxford, 2007, pp 248, US\$55 (hardcover). ISBN 9780195313840.

This is a classic among injury prevention and control researchers and practitioners. Sixteen years ago, at the time of the publication of its first edition, it was one of two or three comprehensive books on the issue of injuries as a public health problem and the scientific principles that should guide their control. I first learned of the book when I attended a 1993 summer course by Drs Robertson and Krauss at the University of Michigan.

With this book and his work, Dr Robertson has inspired many of us around the world to work on injury prevention matters.

This new edition retains the sharpness, wit and wisdom that are characteristic of Dr Robertson. The book contains 15 chapters plus another one with a "summary of principles". In these chapters, Dr Robertson covers in great breath and depth the philosophical, political, and economical aspects that are so intertwined with the history of injury and injury control (Chapters 1, 2, and 15). He also covers in great detail aspects related to the science behind injury epidemiological evidence (both in its descriptive and analytical applications): for example, separate chapters are focused on issues on research objectives (Chapter 3), data systems (Chapters 6 and 7), injury severity and injury outcomes (Chapter 4), and study design choices (Chapters 5, 8 and 9). Other chapters are devoted to summarise the evidence regarding effectiveness of interventions aiming to modify behaviour (whether voluntarily or by law Chapters 10 and 12), to modify environments (Chapters 10–12) or to improve acute care and rehabilitation (Chapter 14). As it is customary in his writing, the clarity and sharpness of his thinking come through in each and every paragraph. So does his passion for the subject and his ironical sense of humour—I found myself laughing on a number of occasions. Yet, when he disagrees with another researcher, he makes it poignantly clear.

Even though the book is peppered with a few examples of research conducted outside the USA, it is mostly a US-cantered book, a

fact for the international readership to keep in mind. Accordingly, the author does not use the International Metric System in his explanations behind the physics of injury.

Although the book has been updated with relevant recent publications, a number of important innovations could have been added. For example, in Chapter 3 (Research Objectives and Usable Data), no reference is made to WISQARS ([www.cdc.gov/ncipc/](http://www.cdc.gov/ncipc/)

wisqars), a web-based injury statistics query and reporting system in the USA. Neither there are references to the emergency-based surveillance systems currently in place in the USA. And on Chapter 4 (Injury Severity) the discussion on disability and long-term consequences feel short considering the more recent publications on this subject. Also on this chapter, the argument on prioritising on high severity injuries should be tempered if

the longer-term consequences and their prevalence were better addressed.

Despite these comments, *Injury Epidemiology* in its third edition is as much of a classic text as it was in its first edition; a book for public health generalists as well as injury specialists to read, and for many of us to re-read.

**M Segui-Gomez**

Universidad de Navarra, Spain;  
msegui@unav.es

### Drug and Therapeutics Bulletin (DTB)

#### Your key source of unbiased, independent advice

For over 45 years DTB has been an independent, indispensable part of evidence-based clinical practice. DTB offers healthcare professionals detailed assessment of, and practical advice on, individual medicines and other treatments, groups of treatment and the overall management of disease.

DTB is now also available online at <http://dtb.bmj.com>:

- ▶ browse or search all DTB content from the latest issue back to 1994
- ▶ email alerting, sophisticated searching, RSS feeds and full text links from cited references
- ▶ interactive services such as My Folders for quick access to articles that you have viewed previously and My Searches to save and re-use useful searches
- ▶ comment online on any DTB article

To subscribe, or for further information, please visit <http://dtb.bmj.com>

