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The sex ratio of offspring of male gasoline filling station workers

Ansari-Lari *et al*[1] reported that the sex ratio (proportion male) of offspring of men exposed to petroleum fuel is significantly low as contrasted with controls. If confirmed, this is an important result. It is in contrast with reports of significantly high offspring sex ratios in communities exposed to active seepages of natural gas and oil[2] and to petrochemical air pollution.[3] Ansari-Lari *et al*[1] suggested that this is because in those communities the mothers (as well as the fathers) were exposed. This suggestion is reminiscent of (but not entirely similar to) the data of Mocarelli *et al*[4] who reported that men (but not women in the absence of paternal exposure) exposed to dioxin subsequently produce excesses of daughters. In accordance with my hypothesis,[5] such men reportedly have low testosterone/gonadotrophin ratios.[6] This being so, I suggest that the hormone concentrations of the male gas station workers of Ansari-Lari *et al*[1] should be assayed. I predict that these men will also have low testosterone/gonadotrophin ratios. Indeed, the hormone levels and offspring sex ratios of male and female gas station attendants elsewhere should be generally examined. The offspring sex ratio of professional drivers is also reportedly low[7]: the cause (ex hypothesi mediated by low testosterone/gonadotrophin ratios) may also be exposure to petroleum fuel.

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References

1 **Ansari-Lari M**, Saadat M, Hadi N. Influence of GSTT1 null genotype on the offspring sex ratio of gasoline filling station workers. *J Epidemiol Community Health* 2004;**58**:393–4.
2 **Saadat M**, Ansari-Lari M, Bahaoddini A. Sex ratio at birth in Masjid-i-Sulaiman (Khozestan Province, Iran). *Occup Environ Med* 2002;**59**:853.
3 **Yang C-Y**, Tasi S-S, Cheng B-H, *et al*. Sex ratio at birth associated with petrochemical air pollution in Taiwan. *Bull Environ Contam Toxicol* 2000;**65**:126–31.
4 **Mocarelli P**, Gerthoux PM, Ferrari E, *et al*. Paternal concentrations of dioxin and sex ratio of offspring. *Lancet* 2000;**355**:1858–63.
5 **James WH**. Evidence that mammalian sex ratios at birth are partially controlled by parental hormone levels at the time of conception. *J Theor Biol* 1996;**180**:271–86.
6 **Egeland GM**, Sweeney MH, Fingerhut MA, *et al*. Total serum testosterone and gonadotropins in workers exposed to dioxins. *Am J Epidemiol* 1994;**139**:272–81.
7 **Dickinson H**, Parker L. Do alcohol and lead change the sex ratio? *J Theor Biol* 1994;**169**:313.

Offspring sex ratio in men exposed to electromagnetic fields

Many environmental factors have been shown to be associated with variation in human sex ratio at birth. There are several studies that have shown the association between fathers' occupation and offspring sex ratio.[1]

Studies considering debate on the adverse effect on health of electromagnetic field have yielded variable results in animals and humans. There are a few studies that have shown a change of offspring sex ratio because of parental exposure to electromagnetic field,[2 3] but others have not.[4 5] However, there is only one study on humans.[2] Therefore this study was undertaken.

Using a simple questionnaire, the number of sons and daughters of 51 power linesman in Shiraz (Fars province, south of Iran) was recorded. The mean of measured magnetic field in their work place was 0.15 mT. Within these families 110 offspring (61 males, 49 females) were identified. The mean duration of employment of subjects was 19 years (range 7–29 years). Because it is reported that paternal age and birth order have some effect on offspring sex ratio, for each exposed worker, three unexposed persons from the general population of Shiraz (without occupational exposure to electromagnetic fields) were matched by age (± 2 years) and number of children as a control group. In the control group, 330 offspring (168 males, 162 females) were identified. The sex ratio expressed as the proportion of the total live births that were male (male proportion). The offspring sex ratio at birth in exposed and unexposed groups were 0.555 and 0.509, respectively. Statistical analysis showed that there was no significant difference between the study groups for male proportion at birth ($\chi^2 = 0.68$; df = 1; p = 0.409).

Irgens *et al* reported that the male proportion in offspring of men in industries with electromagnetic field was slightly reduced.[2] Also Wang and his coworkers reported that the sex ratio significantly decreased after mice were irradiated by an electromagnetic pulse.[3] However, our data are not consistent with these reports. These data and the other two reports on experimental animals[4 5] do not support the hypothesis that exposure to electromagnetic field is an important factor for change in offspring sex ratio.

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doi: 10.1136/jech.2004.025304

Funding: this study was supported by Shiraz University.

References

1 **Ansari-Lari M**, Saadat M, Hadi N. Influence of GSTT1 null genotype on the offspring sex ratio of gasoline station workers. *J Epidemiol Community Health* 2004;**58**:393–4.
2 **Irgens A**, Kruger K, Skorve AH, *et al*. Male proportion in offspring of parents exposed to strong static and extremely low-frequency electromagnetic fields in Norway. *Am J Ind Med* 1997;**32**:557–61.
3 **Wang SM**, Wang DW, Peng RY, *et al*. Effect of electromagnetic pulse irradiation on mice reproduction. *Zhonghua Lao Dong Wei Sheng Zhi Ye Bing Za Zhi* 2003;**21**:329–31.
4 **Ohnishi Y**, Mizuno F, Sato T, *et al*. Effects of power frequency alternating magnetic fields on reproduction and pre-natal development of mice. *J Toxicol Sci* 2002;**27**:131–8.
5 **Ryan BM**, Symanski RR, Pomeranz LE, *et al*. Multigeneration reproductive toxicity assessment of 60-Hz magnetic fields using a continuous breeding protocol rats. *Teratology* 1999;**59**:156–62.

BOOK REVIEW

Survival analysis using S. analysis of time-to-event data

M Tableman, J S Kim. Chapman and Hall/CRC, 2004, US$69.95, pp xv+260. ISBN 1-58488-408-8

This well written introductory text book contains a succinct description of the survival analysis concepts nicely supplemented with examples and S-PLUS commands unlike typical textbooks on statistics or S-PLUS that serve just a single purpose. The didactic nature of this book makes easy reading. Each chapter begins with a list of learning objectives that capture the content to be covered, a gentle introduction to the topics using real life examples, implementation of the methods through detailed S-PLUS commands, and concise interpretation of the results. There is minimum emphasis on theory, however adequate references are provided for enthusiastic readers. Exercises, primarily applied problems, at the end of each chapter sufficiently encompass the material covered. In addition to the standard concepts of survival analysis like Kaplan-Meier, log-rank, model building (Weibull, Cox regression, etc), and diagnostics, the book also covers advanced topics such as competing risks, cutpoint analysis using bootstrap and regression quantiles, which is uncommon for an introductory text book.

The book introduces the basics of survival analysis, thereby targeting the beginners. On a similar note an introduction to S-PLUS commands either in an appendix or as part of the first chapter would have been beneficial. All the commands are intrinsic to survival analysis that a reader with no background in S-PLUS might find it difficult to follow. The concepts and the commands are intermingled in the chapters resulting in a loss of continuity of the thought process in a few places. Supplementing the concepts with example(s) and reserving the S-PLUS commands and outputs to the end of each chapter would have made it more coherent.

Overall, this "practical" book on survival analysis using S-PLUS is well suited for an introductory course in applied statistics for students with some background in S-PLUS.

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