

## LETTERS TO THE EDITOR

### Does child abuse influence subsequent sexual behaviour and risk of AIDS?

SIR - We are concerned about the prevalence of child sexual abuse in Italy. It is approaching 5%, which is similar to estimates (from 1-5%) for other western societies.<sup>1</sup> This implies that in Italy about 450 000 children aged 0-14 years and the same number aged 15-24 years (data from the census of 1991) are sexually abused each year. It has been estimated that in 1994 in the USA about three million children were abused.<sup>2</sup>

We are also concerned about the effect that this abuse may have in later life. Indeed, sexually abused children exhibit behavioural indicators such as: bizarre, sophisticated, or unusual sexual behaviour or knowledge; seductive or promiscuous behaviour; poor peer relationships; prostitution; forcing sexual acts on other children; truancy; and self-injurious behaviour.<sup>2</sup>

In a national survey concerned with sexual behaviour which was based on a random sample of young Italian adults in 10 cities, there was a specific question about child abuse.<sup>3</sup> The anonymised questionnaire was posted to a randomly selected sample of 8404 men and women - 1% of the total population aged 19-24.

Altogether 2776 questionnaires have been returned completed so far. A possible association between child abuse and risk behaviour, was looked for among the 1339 males. Sixty four (4.7%) of them had experienced sexual abuse during childhood. Even given the limitations of the data obtained, a prevalence of child abuse that is nearly 5% is alarming.

More of those who were abused in childhood were already sexually experienced (86%) than those not abused (68%) (odds ratio (OR)=2.97, 95% confidence interval (95% CI) 1.27,6.96). They were also more likely to have engaged the services of a prostitute (23% versus 11%) (OR=2.35, 95% CI 1.28,4.31). Even when only those males who were heterosexually experienced were considered, those who had been abused had an OR of 2.27 (95% CI 1.21-4.26) for having experienced sex with prostitutes (29% versus 15%). The tendency to use prostitutes seems to be independent of the tendency to be sexually experienced. Although based on relatively small numbers, the chance of developing homosexual or bisexual tendencies is markedly increased (9.4% versus 0.5%) (OR=22.38, 95% CI 6.63,75.49). These activities are also known risk factors for HIV infection.

It seems from these preliminary results that sexual abuse in childhood is a trauma which has a lasting effect on psycho-sexual development in adolescence and ultimately in adulthood. Although, the data should be considered with caution because of the possibility of confounding, campaigns aimed at limiting child sexual abuse may have important consequences for AIDS prevention as well.

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- 1 Graham P. *Child psychiatry: a developmental approach*. 2nd ed. Oxford: Oxford University Press, 1991.
- 2 *The identification and reporting of child abuse and maltreatment*. Albany, New York: New York State Syllabus. The University of the State of New York. The State Education Department, 1991.
- 3 Signorelli C, Cattaruzza MS, Zantedeschi E, Bossi A, Fara GM. Le abitudini sessuali dei giovani Italiani: risultati di un'indagine nazionale. *Panorama della Sanità* 1994;38:19-23.

### Decline in sex ratios at birth, England and Wales, 1973-90

SIR - In reply to W H James's letter in the December 1996 issue of the Journal,<sup>1</sup> we wish to point out the following. We originally analysed the sex ratio for the period 1950-92 using logistic regression and found a significant linear decreasing trend, even after allowing for the proportion of births to older mothers, who are known to be more likely to produce girls.<sup>2</sup> This time period was chosen before inspection of the data: we had been comparing the sex ratio of births in Cumbria for the period 1950-89 with the national sex ratio<sup>3</sup> and had extended our consideration of the national figures to the most recent year for which the proportion of births to older mothers was available.

James<sup>1</sup> observes that the sex ratio is no longer falling so we repeated our analysis for the period 1950-94 and found that the significant linear trend remained with the same odds ratio (OR) and 95% confidence intervals (95% CI) as for the period 1950-92. The proportion of births to mothers over 35 years is known only for the period 1950-93 and, including this proportion as a possible explanatory variable as before, the decreasing trend remains significant with the odds ratio as before but a slightly narrower confidence interval: (95% CI: 0.9996, 0.9997).

We further tested whether the increase in sex ratio during the period 1990-94 was significant. Using logistic regression as before, we found a significant linear trend ( $p=0.01$ ) with an OR of 1.002, (95% CI: 1.000,1.013). However, the significance levels associated with a statistical test such as this, with the time period to be tested chosen after inspection of the data, are not valid and the real significant levels are less extreme. So in this case there is no evidence, as yet, that the increase has occurred other than by chance.

Similarly, James, referring to his recent paper,<sup>4</sup> states that sex ratios of white births in the USA rose during the years 1965-75 and fell during the years 1975-88. Unfortunately, no results of any statistical analysis were reported, the conclusions being inferred from visual inspection of the data. Without the data we were unable to check whether these trends were statistically significant.

Although it is accepted that increased coital rate increases the sex ratio,<sup>5</sup> there is no evidence that this mechanism operates at a population as opposed to an individual level. James<sup>4</sup> refers to reports that the coital rate in the US increased by 22% in the period 1965-75 when the sex ratio was increasing

and decreased by 27% in the later period, 1975-88; although the accuracy of such reports may be open to speculation. No statistical analysis has been presented to show whether there is a significant correlation between these changes in coital rates and the sex ratio in the US and, indeed, any such analysis, referring to changes in the coital rate over two consecutive periods, rather than the coital rate in each year, would be unreliable as it would be based on only three points, in this case, the years 1965, 1975, and 1988.

James points out that whereas Williams *et al*<sup>6</sup> reported a lowered sex ratio in association with pollution, Lloyd *et al*<sup>7</sup> reported the opposite effect. The former study referred to pollution from an incinerator and the latter to pollution from a steel foundry. It is possible that different chemicals might affect the sex ratio in different directions or that both observations are chance findings.

Further investigations of the fluctuations of the sex ratio ideally require analysis over a much longer period of time, using time series methodology and including covariates known for each year.

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- 1 James WH. The decline in sex ratios at birth, England & Wales 1973-90. *J Epidemiol Community Health* 1996;50:690.
- 2 Dickinson HO, Parker L. Why is the sex ratio falling in England and Wales? *J Epidemiol Community Health* 1996;50:227-28.
- 3 Dickinson HO, Parker L, Binks K, Wakeford R, Smith J. The sex ratio of children in relation to paternal preconceptional radiation dose: a study in Cumbria, northern England. *J Epidemiol Community Health* 1996;50: 645-52.
- 4 James WH. What stabilizes the sex ratio? *Ann Hum Genet* 1995;59:243-49.
- 5 James WH. The human sex ratio: a review of the literature. *Hum Biol* 1987;59:721-52.
- 6 Williams FLR, Lawson, AB, Lloyd OL. Low sex ratios of births in areas at risk from air pollution from incinerators as shown by geographical analysis and 3-dimensional mapping. *Int J Epidemiol* 1992;21:311-19.
- 7 Lloyd OL, Smith G, Lloyd MM, Holland Y, Gailey F. Raised mortality from lung cancer and high sex ratio of births associated with industrial pollution. *Br J Ind Med* 1995;42: 475-80.

## NOTICES

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### Health care in wartime conditions

Health under fire: the WHO former Yugoslavia. *H Vuori*

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