LETTERS TO THE EDITOR

Seasonality of births : changing pattern correlated with the seasonality of marriage

SIR - The report of Russell *et al*¹ on the changing seasonality of birth concludes that this may be related to changes in the climate and environment or to social differences. In a previous paper,² based on data on births and marriage published by the National Statistical Service of Greece for the years 1956-80,³ we reached similar conclusions.

Firstly, there was a clear change in the pattern of seasonality of birth over the 25 year period, characterised by (a) a gradual shift in peak incidence from January to June, (b) a gradual smoothing of the second peak in October, (c) a tendency of births for each month to come closer to the average monthly rate, while (d) December constantly has the fewest births (fig 1). Other researchers have found that these changes are generally the same in urban, semi-urban, and rural areas in our country.⁴

Secondly, we also examined the seasonal variation in marriage for the same period and concluded that the recent seasonal variation model of births was strongly correlated with that of marriages. The correlation becomes more positive as the number of children per family falls (the average number of children per woman aged 10-49 years was 3.7 in 1933-37, 2.3 in 1956-58, and 1.9 in 1983⁵). Because of this reduction, the seasonality of births tends more and more to correlate with the seasonality of first births and through this with the seasonality of marriages (fig 2).

Figure 1 Seasonal variation indicators (SVI) of births in Greece, 1956-80. (Percentage of births in each month is given while the average of births over 12 months for each five years is taken as the basis = 100.) Initial data were corrected to data for months of equal duration (using a new method⁶) and for the declining births in January of each five year period.

Figure 2 Seasonal variation indicators of births (bottom) in relation to marriages nine months before (top). To smooth the large monthly variations in marriages and to show their general tendency, moveable averages of four months were calculated. The equations in each five year period of births represent the correlation between marriages (m) and births (b) nine months afterwards (Pearson's r, p value).

Figure 3 Crude birth rate (CBR) (births per 1000 individuals in the whole population) in Greece for the years 1956–80. The area between two curves represents the seasonality of reduction in births.

Thirdly, a rise in the number of births did not occur in any of the months. As seen in figure 3, there was a reduction in births every month, but this was strongly seasonal: it was lowest in the summer months and at a maximum from September to April. Thus, changes in the seasonality of births represent the seasonality of the reduction in births.

Perhaps the reduction in births between September and April, which is wholly dependent on the reduction in conceptions between December and June, represents the gradual change in Greek society from a mainly rural to a mainly urban one. This alteration gradually shifted most marriages (and, therefore, most first conceptions) from December/January (after Christmas celebrations) to September (after summer holidays), and thus most births from October to June. Finally the low numbers of births in December represent the time of fewest marriages (and through these the fewest first conceptions) before the Greek orthodox church's Easter celebrations.

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Condom machines in hospitals: do we practice what we preach?

SIR – To achieve the objectives of the “Health of the Nation”¹ and “Health at Work in the NHS”² initiatives effective workplace interventions are necessary to promote health, including sexual health. In this regard increasing the availability of condoms to the residential staff in hospitals is an important intervention. There are many residential staff who are unlikely to be sexually abstinent, although there is no reliable research on sexual behaviour in hospitals. Readily available condoms offer these staff the opportunity to protect themselves against sexually transmitted diseases such as HIV infection, and being seen to be following their own advice with regard to safer sex, health staff will have more credibility with people when promoting use of condoms.

In our 1990 survey we found that no hospital residences had condom dispensing machines, but condoms were available elsewhere in five of 34 (15%) hospitals.³ Sixteen of 34 (47%) managers felt there should be condoms in hospitals residences. We write with new and updated information on condom availability in hospitals.

We sent a self completion questionnaire on condom availability in hospitals to a sample of district general hospitals in England in 1990 and 1991, and repeated the survey in 1993 in 175 of the biggest hospitals in England. For the 1990 and 1991 surveys, 34 and 60 district general hospitals respectively were selected randomly from the *Hospital and Health Services Yearbook*. In the 1993 survey, 175 hospitals with 300 or more beds were selected from throughout England.

In the 1991 survey of 60 hospitals (response rate 52 of 60, 87%), condoms were available in four of 52 (8%) of doctors' and five of 52 (10%) nurses' residences, and somewhere on the complex in 18 of 52 (35%) hospitals. Thirty six of 52 (69%) managers felt there should be condoms in hospital residences.

In the 1993 survey of the 175 English hospitals with 300 or more beds (response rate 141 of 175, 81%), condoms were available in eight of 128 (6%) doctors' residences, and 18 of 134 (13%) nurses' residences, and somewhere on the complex in 75 of 141 (53%) hospitals. Eighty six of 141 (61%)

managers felt there should be condoms in hospital residences. Only seven of 141 hospitals had a health policy that referred to condom availability.

Our work shows that most hospitals still do not have condom dispensing machines in hospital residences, although the suggestion of a change since 1990 in the availability of condoms somewhere in the hospital is welcome. Several managers mentioned the costs of installation, maintenance, or vandalism as potential deterrents against installing machines, but these are likely to be low in comparison, for example, to the treatment of just one person with HIV infection. Few hospitals had a health promotion policy, and hospital managers should consider this as an important first step in promoting the health of patients and staff. Such a policy should include prevention of HIV infection by providing easier access to condoms. The costs of installing and maintaining condom machines should be considered but not used as an excuse for inactivity. The workplace continues to be an underutilised arena for health promotion services, including those for sexual health.

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- 1 Department of Health. *The Health of the Nation*. London: HMSO, 1992.
- 2 National Health Service Management Executive. *Health at work in the NHS*. Leeds: NHS Management Executive, 1992.
- 3 Madhok R, Bhopal R S. Availability of condoms in district general hospitals. *BMJ* 1990;301: 928.
- 4 The Institute of Health Service Management. *Hospitals and Health Service Yearbook*, London: Institute of Health Service Management, 1993.

NOTICES

The 2nd Advanced Course in Nutritional and Lifestyle Epidemiology will be held in Wageningen, The Netherlands, 29 May–3 June 1995. For further information please contact: Esther GM Pallast, Department of Epidemiology and Public Health, Agricultural University Wageningen, PO Box 238, 6700 AE Wageningen, The Netherlands. Tel: +31 8370 84124 Fax: +31 8370 82782. e-mail: Esther.Pallast@medew.hegl.wau.nl

The XIVth World Congress on Occupational Safety and Health will be held in Madrid, Spain, 22–26 April 1995. For further information please contact: Secretaria del Congreso, Instituto Nacional de Seguridad e Higiene en el Trabajo, Calle de Torrelaguna 73, E-28027 Madrid, Spain. Tel: +34-1-404 57 36. Fax: +34-1-326 78 55.

The European Regional Meeting of the International Epidemiology Association, **Perspectives on Epidemiology in Europe**, will take place in The Hague, The Netherlands, 27–30 August 1995. For further information please contact: Congrex Holland, Keizersgracht 782, NL-1017 EC Amsterdam, Tel: +31 20 6261372. Fax: +31 20 6259574.