Season-of-birth and "age incidence" effects

SIR: Eagles *et al* (1995) report an increase over the period 1900 to 1969 in the ratio of winter/spring to summer/autumn births of males (but not females) who were later admitted with a diagnosis of schizophrenia. These authors attribute the increase to seasonal environmental factors such as infection and malnutrition.

An entirely different explanation is suggested by Lewis & Griffin (1981) and Lewis (1989) who drew attention to the "age incidence" effect – the fact that for a disease risk which increases with age those born in the earlier months of each year have a greater risk than those born in the later months (simply because they are older) of becoming ill in a succeeding (within a lifetime) year of recorded admissions. As Lewis (1989) points out, the effect will be greater (because the size of the effect is inversely related to age) with earlier onsets of illness than with later onsets. In Eagles *et al*'s study those who were born in the decade 1900–9 are obviously likely to have a later mean age of onset than those born in 1960–9 (who were aged between 18 and 27 years when the period of investigation ended in 1987). The age incidence effect therefore appears to account for Eagles *et al*'s main finding. Moreover since the female:male ratio in schizophrenic illnesses is linearly related to age (early onsets are commoner in males, and late onsets in females) a sex difference in the findings is also predicted.

According to this interpretation Eagles *et al*'s findings can be accounted for without recourse to hypotheses of an environmental influence.

EAGLES, J. M., HUNTER, D. & GEDDES, J. R. (1995) Gender-specific changes since 1900 in the season-of-birth in schizophrenia. *British Journal of Psychiatry*, **167**, 469–472.

LEWIS, M. S. (1989) Age incidence and schizophrenia: I. The season of birth controversy. *Schizophrenia Bulletin*, **15**, 59–73.

— & GRIFFIN, T. A. (1981) An explanation for the season of birth effect in schizophrenia and certain other diseases. *Psychological Bulletin*, **89**, 589–596.

T. J. CROW

Warneford Hospital
Oxford OX3 7JX

AUTHORS' REPLY: We were intrigued by Crow's hypothesis, but feel that he overplays the magnitude of any possible effect of the "age-incidence artifact". That this artifact may exist in schizophrenic birthdates is very likely, but it should exist to a similar degree in other conditions, notably those with an early age at onset (Dalen, 1990). Lewis (1989) himself can cite few instances of the "artifact" in other conditions. Furthermore, as Torrey & Bowler (1990) have argued, if Lewis were correct about the importance of the artifact, then January should have the highest rate of schizophrenic births while December the least, and southern hemisphere findings should mirror those in the northern hemisphere. The data do not bear out the hypothesis. Furthermore, studies which have corrected for age incidence (Watson, 1990) continue to find a season-of-birth effect in schizophrenia.

It is worth noting that, in our own paper, April birthdates were most common while January and December birthdates were fifth and sixth commonest respectively (p. 470).

We feel that Crow's attempts to explain the gender differences in our study again suffers from the difficulty of taking a factor of small magnitude to attempt to explain a large effect. Mean age at onset is about four years younger for men than it is for women (Goldstein *et al*, 1989), and our study spanned a 70-year period of birthdates.

DALEN, P. (1990) Does age incidence explain all season-of-birth effects in the literature? *Schizophrenia Bulletin*, **16**, 11–12.

GOLDSTEIN, J. M., TSUANG, M. T. & FAROANE, S. V. (1989) Gender and schizophrenia: implications for understanding the heterogeneity of the illness. *Psychiatry Research*, **28**, 243–253.

LEWIS, M. S. (1989) Age incidence and schizophrenia: part I. The season of birth controversy. *Schizophrenia Bulletin*, **15**, 59–73.

TORREY, E. F. & BOWLER, A. E. (1990) The seasonality of schizophrenic births: a reply to Marc S. Lewis. *Schizophrenia Bulletin*, **16**, 1–3.

WATSON, C. G. (1990) Schizophrenia birth seasonality and the age-incidence artifact. *Schizophrenia Bulletin*, **16**, 5–10.

J. M. EAGLES

Royal Cornhill Hospital
Aberdeen AB9 2ZH

J. R. GEDDES

Warneford Hospital
Oxford OX3 7JX

Anorexia nervosa rates – conclusions for the wrong reasons

SIR: We read with interest the review paper on rates of anorexia nervosa by Fombonne (1995). We completely concur with him that "there is no evidence of a secular increase in its incidence". However, we feel that Fombonne's conclusions, albeit based on an ambitious attempt to cover the literature, are not well supported by the evidence he cites.

The main reason why there is no evidence for an increase in the rate of anorexia nervosa is that there are so few community based studies that a proper meta-analysis taking account of secular trends cannot be undertaken. Fombonne fails to discuss this state of affairs and instead concentrates on a whole

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