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Is Schizophrenia Disappearing?

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"The incidence of schizophrenia is regarded as being similar between different cultures and times. However, several studies, mostly based on first-admission rates, have suggested that the incidence has declined over the past 10–15 years. Data from England and Wales for 1952–86 have been examined: there has been a substantial decrease, beginning in the mid-1960s, in the incidence of schizophrenia."

The summary quoted above is from an article by Der *et al* (1990). John Eagles was invited to comment on the study.

Fluctuations over time in the incidence of a disease can yield important information about its aetiology. In the case of schizophrenia, a significant decline in incidence would suggest strongly that there has been a major change in one or more environmental factors which cause, or lead to the expression of, the disease. The present study follows others which have shown a major decline over the last 20 years in the rates of schizophrenia diagnosis among new psychiatric in-patients in Scotland (Eagles & Whalley, 1985), Denmark (Munk-Jorgensen, 1986; Munk-Jorgensen & Jorgensen, 1986) and New Zealand (Joyce, 1987).

Mr Der and his colleagues have not escaped some of the complexities of method inherent in studies of this nature. They acknowledge that their data on schizophrenic first admissions to English and Welsh hospitals between 1952 and 1970 are somewhat patchy as a result of incomplete data and changes in methods of data collection. In addition, they had to make adjustments to the figures of 'first admissions' between 1964 and 1969, as a result of imprecision at that time in the distinction between a first admission and a readmission. Their first-admission rates are calculated, it appears, on the basis of the total population of England and Wales for each of the years studied. One can quibble with this method on the basis that the majority of schizophrenics will be admitted to hospital for the first time between their late teens and late thirties, and that fluctuations in the age structure of the population (notably the 'baby boom' in the 1960s, and increasing longevity) could have a significant effect on rates calculated in this manner, particularly when the period of investigation spans over 30 years. Age-standardised rates would have yielded a more precise picture.

However, the magnitude of the decline in schizophrenic first admissions (around 50%) almost certainly indicates that these problems of method do not constitute factors of major importance. This decline took place between the mid-1960s and the mid-1980s with a sharper decline in men than in women, but without much difference in magnitude of overall decline between the sexes.

The authors address alternatives to the explanation that these data indicate a genuine decline in the incidence of schizophrenia. They note that there has been a consistent fall in first admissions with affective psychosis and with neurotic disorders, while the rates for 'other psychoses' remained stable. It is implausible, therefore, that schizophrenics were being 'rediagnosed' into these categories. In this context, it is noteworthy that the decline in schizophrenic first admissions commenced in the mid-1960s, especially since studies in other countries have not investigated years before 1969. One possible explanation for a decline in diagnoses of schizophrenia after 1969 was the introduction of lithium carbonate, after an increase in such diagnoses following the introduction of the neuroleptics. Such a pattern has been suggested in the USA (Baldessarini, 1970), but would not fit the data in this study since lithium was not used on a significant scale in the UK until five years after the start of the decline in schizophrenic diagnoses.

The other major alternative explanation to that of a fall in incidence of schizophrenia is that the data reflect the movement towards community care and a resultant, increasing tendency to treat schizophrenics without their ever being admitted to hospital. They note that while schizophrenics constituted 21% of first admissions in 1952, this proportion had fallen to 9% by 1986. It is exceedingly unlikely that the trend towards treatment of schizophrenics in the community could have outstripped that tendency among patients with milder psychiatric disorders. The authors also note our findings in Aberdeen, where first contacts with psychiatric services (as opposed to first admissions) had fallen by over 50% since 1969 (Eagles *et al*, 1988).

The authors conclude, correctly in my view, that the incidence of schizophrenia in England and Wales has fallen significantly since the mid-1960s. One must therefore hypothesise that there has been a

major change in one or more aetiological factors over that period. In this context, Fig. 3 of their paper (reproduced in Fig. 1) is perhaps particularly revealing. This figure contrasts the ages at the time of first admissions in 1970 and in 1981, showing rates for males and females. It shows that there was little change for patients aged 55 and over, and the authors hypothesise that this may reflect a stability in rates of admissions with paranoia, since these were included among the schizophrenic data. However, in younger patients, all other age groups in both sexes appeared to show a relatively consistent fall in incidence between 1970 and 1981.

Hypotheses of environmental precipitants of schizophrenia have tended to centre upon perinatal factors, with some evidence for the role of prenatal infection and growing evidence for the importance of obstetric complications. However, if changes in such perinatal factors were solely responsible for the declining incidence of schizophrenia, then we would be witnessing its selective fall among younger patients.

The evidence from this study, therefore, suggests that one or more current environmental risk factors have declined in frequency or virulence between the 1960s and the 1980s. Any such factor would be likely to affect the expression of a constitutional predisposition towards schizophrenia, be that predisposition genetic, or acquired in the prenatal period. Perhaps the most plausible possibilities among such environmental precipitants would be those infectious diseases which declined markedly in prevalence and/or incidence between the 1960s and the 1980s, either as a result of immunisation programmes or increased herd immunity. Rubella, measles, poliomyelitis, whooping cough and diphtheria all fall into this category. It is of note that rates of infection in populations in the USA with diphtheria (Watson *et al*, 1984), measles and poliomyelitis (Torrey *et al*, 1988), in the prenatal period have been linked to rates of subsequent schizophrenia.

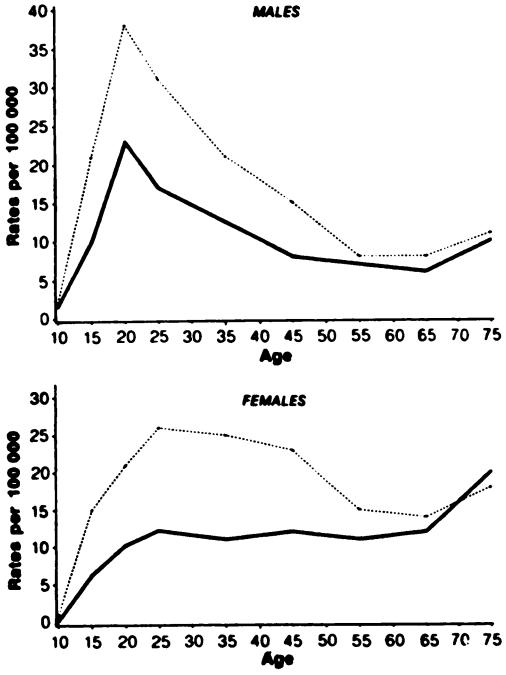

Fig. 1 First-admission rates for schizophrenia and paranoia by sex and age (- - - 1970; —— 1981).

The authors conclude their article by advocating that comparisons be made of individuals diagnosed schizophrenic within the last three decades, using standardised diagnostic criteria for schizophrenia in order to determine what part has been played, if any, by changing diagnostic practices in producing their findings. It seems necessary, also, to investigate further the social and demographic characteristics of the specific population which has shown the greatest decline in incidence of schizophrenia, since this may yield valuable information about the aetiology of the disorder.

References

BALDESSARINI, R. J. (1970) Frequency of diagnoses of schizophrenia versus affective disorders from 1944 to 1968. *American Journal of Psychiatry*, **127**, 759–763.

DER, G., GUPTA, S. & MURRAY, R. M. (1990) Is schizophrenia disappearing? *Lancet*, **335**, 513–516.

EAGLES, J. M. & WHALLEY, L. J. (1985) Decline in the diagnosis of schizophrenia among first admissions to Scottish mental hospitals from 1969–1978. *British Journal of Psychiatry*, **146**, 151–154.

——, HUNTER, D. & MCCANCE, C. (1988) Decline in the diagnosis of schizophrenia among first contacts with psychiatric services in North-East Scotland, 1969–1984. *British Journal of Psychiatry*, **152**, 793–798.

JOYCE, P. R. (1987) Changing trends in first admissions and readmissions for mania and schizophrenia in New Zealand. *Australia and New Zealand Journal of Psychiatry*, **21**, 82–86.

MONK-JORGENSEN, P. (1986) Decreasing first admission rates of schizophrenia among males in Denmark from 1970 to 1984: changing diagnostic patterns? *Acta Psychiatrica Scandinavica*, **73**, 645–650.

—— & JORGENSEN, P. (1986) Decreasing rates of first admission diagnoses of schizophrenia among females in Denmark, 1970–1984. *Acta Psychiatrica Scandinavica*, **74**, 379–383.

WATSON, C. G., KUCALA, T., TILLESKJOR, C., *et al* (1984) Schizophrenic birth seasonality in relation to the incidence of infectious diseases and temperature extremes. *Archives of General Psychiatry*, **41**, 85–90.

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