

## Immigration and schizophrenia: the social causation hypothesis revisited\*

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Schizophrenia occurs in national populations with an annual prevalence of 1.4 to 4.6 per 1000 and incidence rates of 16–42 per 100 000 (Jablensky, 2000). Although the incidence rates vary between countries by a factor of less than 3, wider ranges of variation are found among population subgroups within single countries. In the UK, for example, incidence rate ratios of 4 or above have been estimated both for the lowest social class in the indigenous White population and for Black immigrant groups. These data provide the most compelling evidence yet to hand for the role of socio-economic factors in aetiology.

### SCHIZOPHRENIA AND SOCIAL CLASS

Half a century ago the links between schizophrenia and socio-economic status were highlighted by research in the USA and Britain. By the mid-1960s the relevance of low socio-economic status had been confirmed by a range of studies, some focused on the urban ecology of mental disorders, others on social class differences in prevalence and incidence rates, course and outcome of illness, and patterns of medical treatment and care. A concentration of cases in low-status occupations was confirmed by area surveys and national statistics. Case rates repeatedly displayed class differentials, whether the categories were based solely on occupation, or incorporated other criteria such as education and district of residence.

An analysis for the General Register Office (Brooke, 1959) covered first admissions for schizophrenia in England and Wales in the quinquennium 1949–53. On average there were some 3000 new cases annually among men aged 20 years or over,

corresponding to a national rate of 21 per 100 000. For single men (the great majority), the rate in social class V was 4.1 times as high as in social class I, and for the ever-married 3.5 times as high.

Prevalence studies over the same period showed that this relative excess was compounded by a worse clinical prognosis and a greater accumulation of chronic illness among the poor. Lower-class patients with schizophrenia were more likely to be brought to treatment by the police or social agencies, to be compulsorily admitted, to receive physical treatment or custodial care only and to become 'long-stay cases' (Cooper, 1961).

The observed social class gradient in schizophrenia generated a good deal of controversy. Initially it was thought to be causal in nature (the environmental 'breeder' hypothesis), especially as some researchers reported similarly skewed distributions in the families of origin. Soon, however, contrary evidence began to emerge. Goldberg & Morrison (1963), making use of birth register data, compared the occupations of men aged 25–34 years with a first admission for schizophrenia with those of their fathers at about the same age. They found a large excess of class V cases among the patients, but for the fathers the socio-economic status distribution was similar to that of the general population. Examination of the patient group revealed a pattern of poor scholastic and work achievement, and a career decline beginning typically in adolescence. Therefore, it appeared that the affected men had not been socially disadvantaged from birth, but suffered from functional impairments that had handicapped them at school and in early working life. This study, although not definitive, led many psychiatrists to conclude that premorbid social drift by itself (the 'selective social drift' hypothesis) provided a sufficient explanation of the epidemiological findings. Partly in consequence,

progress in identifying environmental risk factors drew almost to a halt.

In the intervening years, low socio-economic status has shown no decline in importance as a public-health risk factor in the UK. As social inequality has increased in British society, so class differentials in mortality and morbidity have grown more pronounced (Whitehead *et al*, 1992). Whether class-specific rates for psychotic illness have also diverged nationally is unclear, although certainly local area rates continue to differ widely according to socio-economic level.

Although the importance of selective social drift stands confirmed, some more recent findings have drawn attention back to the environmental 'breeder' hypothesis. First, the broad association is now thought to be characteristic of modern urban society, and much weaker in rural communities, suggesting that features of big-city life may be causally implicated (Eaton *et al*, 2000). A number of studies support the notion that clustering of schizophrenia in decaying inner-city areas is not simply a consequence of geographic drift or segregation, but that being born or brought up in such areas is in itself a risk factor for the condition (Harrison *et al*, 2001). Second, data from an ongoing national cohort study in Sweden (Hjern *et al*, 2004) show convincingly that social adversity in childhood is associated with an increased risk of developing schizophrenia (S. Wicks, personal communication, 2004). Third, interest in environmental causes has been reawakened by evidence from a different quarter: the high rates of psychotic illness found among African-Caribbean and other Black immigrants in the UK.

### SCHIZOPHRENIA AND IMMIGRANT STATUS

Evidence of a high frequency of schizophrenia in the Black immigrant population in the UK was first noted in the 1960s, and has been confirmed in reports from different parts of Britain. Case-control studies making use of population denominators from the 1991 or 2001 UK census to estimate standardised incidence rates for schizophrenia in different ethnic groups have underpinned the earlier findings (for review, see Jarvis, 1998; Sharpley *et al*, 2001). Standardised rate ratios have varied widely, partly because of widely differing estimates for the comparison groups, and

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methodological differences between the studies are too great to permit pooling of the data. Nevertheless, in overview they suggest an approximately fourfold increase of risk in the target population. Preliminary findings of a multicentre British collaboration, the Aetiology and Ethnicity in Schizophrenia and Other Psychoses (ÆSOP) study, provide a rate ratio of 6.8 (95% CI 5.6–8.3) for psychosis in African–Caribbean people compared with White (Fearon *et al*, 2004).

This phenomenon has aroused wide interest in possible underlying causes. Balanced reviews of the field have tended to favour a primarily social rather than a genetic explanation, on a number of grounds (Jarvis, 1998; Sharpley *et al*, 2001):

- (a) The excess risk is not specific for African–Caribbean immigrants (themselves ethnically diverse); it is also present among African-born Black immigrants to the UK, and to a lesser extent among immigrants from Asian countries.
- (b) Incidence rates of schizophrenia in Caribbean countries are similar to those found in the indigenous UK population, and much lower than reported rates among immigrants from that region. Morbid risk for schizophrenia in parents and siblings is about the same in those two populations. Yet the rate for schizophrenia in second-generation African–Caribbean people born in the UK appears to be higher than in the first generation, as is also the risk among patients' siblings. This pattern is strongly suggestive of an environmental rather than a genetic effect.
- (c) There is no evidence for selective immigration from the Caribbean as part of a pre-psychotic segregation or drift process. Indeed, given economic conditions in the 1950s and 1960s, it seems more likely that migration from the West Indies would have been selective for upwardly striving individuals.
- (d) African–Caribbean patients with schizophrenia manifest more social handicaps than their counterparts in the indigenous White population. They are more likely to be unemployed, to have a record of convictions, to be resident in decaying inner-city areas, to be living alone, and to have experienced prolonged separation from both parents in early life.
- (e) Moreover, the base population from which these patients are drawn is disadvantaged in terms of socio-economic status, educational attainment, employment and housing standards, as well as being subject to racial discrimination. A study of 10-year-old children, conducted in the 1970s, suggested that a high proportion of second-generation Black immigrant children, raised in Britain, were growing up in overcrowded, multiple-occupancy houses; had mothers in full-time unskilled work; were being looked after by unregulated childminders, and had lived apart from one or both parents for more than 1 month (Rutter *et al*, 1975). Such children were also at increased risk of being taken into residential or foster care. Since the study was conducted in one inner-city borough of the kind in which Black immigrants are mainly concentrated, the comparative data probably underestimated the true extent of national differences.
- (f) Characteristic of the immigrants' pathways to psychiatric care are long delays in seeking professional help, a lower probability of medical referral, frequent involvement of the police and emergency services and high proportions of compulsory and secure-unit admissions. The long-term outcome tends to be correspondingly unfavourable for African–Caribbean patients (Takei *et al*, 1998).

### REAPPRAISING THE LINKS BETWEEN SOCIAL CLASS, IMMIGRANT STATUS AND SCHIZOPHRENIA

There are thus striking parallels, with regard both to schizophrenia rates and to social characteristics, between the lower-class indigenous groups highlighted in earlier psychiatric surveys and the African–Caribbean population of Britain's inner cities today. Reliable partialling out of the variance in incidence rates between social class and ethnic differences in schizophrenia risk is only now becoming possible. In one Swedish cohort study, risk ratios for all ethnic minorities were diminished – and among non-Europeans virtually eliminated – by adjusting for socio-economic differences (Hjern *et al*, 2004). Although comparable data for the UK are not yet available, the parallels outlined above already call for a reappraisal

of environmental factors in schizophrenia. Social drift theory alone does not explain the high rates found among Black immigrants, which must be due – wholly or in part – to environmental exposures. This conclusion lends support to the hypothesis that low socio-economic status is a risk factor for schizophrenia, and argues the need for a perspective that incorporates both social class and immigrant status.

Since the disorder may strike in families at any level of society, and is relatively uncommon at all levels, social disadvantage can be neither a sufficient nor a necessary cause, but must simply increase the probability of pathogenic exposures. What kinds of pathogen might be implicated? To date most attention has been focused on adversity in adult life, including unemployment and poverty, social isolation, and residence in inner-city areas characterised by poor housing, overcrowding, lack of defensible space, and high levels of crime and illicit drug use. Here, however, two problems arise. To begin with, the population groups most subject to such conditions – namely, White people in the lowest socio-economic groups and Black immigrants to the UK – appear not to have comparably large increases in risk for the common, non-psychotic forms of mental disorder. Second, the underlying vulnerability in schizophrenia seems to be determined in the earliest stages of life, pointing to the critical importance of harmful exposures at that time. A major challenge for psychiatric epidemiology will be, with the help of matched control and cohort studies, to ascertain the relative frequency of different developmental hazards among children born into the least privileged groups of society and to test their significance for schizophrenia and related psychoses.

### DECLARATION OF INTEREST

None.

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