

Schizophrenia in black Caribbeans living in the UK: an exploration of underlying causes of the high incidence rate

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ABSTRACT

The incidence of schizophrenia in black Caribbeans living in the UK is substantially higher than in the white British population. When first reported, these findings were assumed to be a first-generation migrant effect or merely the result of methodological artefacts associated with inconsistencies in the diagnosis of schizophrenia in black Caribbeans and doubts about population denominators. More recently, it has become clear that the incidence of schizophrenia, based on standardised diagnosis and sophisticated census methods, is higher still in second-generation black Caribbeans. The largest study to date has demonstrated a ninefold higher risk of schizophrenia in UK-resident black Caribbeans: findings that are of concern to black Caribbean communities, to their GPs, and to health service managers responsible for resource allocation. A literature search was carried out in order to explore possible reasons for the reported excess incidence of schizophrenia in UK-resident black Caribbeans. Competing hypotheses are reviewed and the paper concludes with a summary of specific social and psychological risk factors of significance within the black Caribbean community. Awareness of the factors associated with the onset and presentation of schizophrenia in black Caribbeans may help early diagnosis and rapid access to appropriate treatment which, in turn, appear to be related to improved long-term outcomes.

Keywords

aetiology; ethnicity; incidence; psychosis; schizophrenia.

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INTRODUCTION

The median global prevalence of schizophrenia has been estimated at 4.6 (5th to 95th centiles, 1.9–10) per 1000 of the general population.¹ In the UK, a GP with an average list size of just under 2000 patients can expect to care for about eight patients with schizophrenia,² and possibly 12 if their practice is based in an urban area.³ Patients with schizophrenia consult their GP more than twice as frequently as the average patient, and it is the GP who is the health professional most likely to maintain contact and develop a long-term relationship with a patient with schizophrenia.⁴ Incidence rates are much lower than prevalence rates because schizophrenia commonly follows a protracted course. Global incidence rates are estimated to be 15.2 (5th to 95th centiles, 7.7–43.0) per 100 000,⁵ so GPs can, on average, expect to see one new case every 3 years.

Elevated incidence rates of schizophrenia in UK black Caribbeans have been consistently reported.⁶ The UK-based Aetiology and Ethnicity in Schizophrenia and Other Psychoses (AESOP) multisite (Bristol, south-east London, and Nottingham) study is one of the largest studies to examine ethnic variations in schizophrenia incidence.⁷ In 2006, AESOP reported a ninefold increase in the risk of developing schizophrenia in black Caribbeans when compared with the white British population: the increased risk was 5.8 in black Africans and 1.4 in South Asians.⁸ These increased rates were derived from a population aged 16–64 years, with data for both sexes combined. Given these reports, a systematic literature search was conducted to explore possible factors accounting for these high rates of schizophrenia.

METHOD

A systematic search of MEDLINE®, EMBASE, and PsychINFO databases was conducted employing the following search string: (schizophrenia OR psychos\$) AND (ethni\$ OR African OR Caribbean OR migrant OR migration OR immigrant OR immigration OR emigration OR emigrant) AND (epidemiolog\$ OR aetiolog\$ OR etiolog\$ OR incidence OR prevalence).

How this fits in

Earlier studies have reported an increased incidence of schizophrenia in African-Caribbeans living in the UK, but methodological difficulties have influenced the interpretation of these findings. In the most robust UK study to date, the incidence of schizophrenia was found to be ninefold higher in black Caribbeans than in the white British population. The contributory risk factors appear to be a combination of social and psychological factors, which result in particular vulnerability to the development of schizophrenia. Increased awareness of these factors in the black Caribbean community may contribute to early diagnosis and rapid access to appropriate treatment, which in turn are likely to translate into improved long-term outcomes

The computerised search strategy was restricted to publications in the English language from 1987 to 2007. A total of 604 unique references were identified. Titles and abstracts were screened to discard irrelevant papers, and reference lists from non-discarded papers were checked for additional sources. A total of 231 relevant references were collated. Selected references are cited here; the full list of references is available from the authors.

The research concentrated mainly on incidence studies as these provide more insight into the potential triggers of schizophrenia, whereas prevalence studies may be harder to interpret; for example, the better prognosis of schizophrenia in developing countries results in correspondingly lower prevalence rates.⁹ Where possible, studies about black Caribbeans were searched for, as distinct from black Africans, although the terms 'Afro-Caribbean' in the earlier literature and 'African-Caribbean' more recently, have often been used in the literature to indicate both African and Caribbean groups.

RESULTS

The literature search revealed several hypotheses that might account for the high incidence of schizophrenia in black Caribbeans. These are summarised below.

Genetic predisposition

The most powerful risk factor for the development of schizophrenia is having an affected family member. The lifetime risk increases with genetic relatedness: 2% in third-degree relatives (first cousins); 2% (uncle/aunt) to 6% (half-siblings) in second-degree relatives; and 6% (parents) to 9% (siblings) to 13% (children) in first-degree relatives of affected individuals.¹⁰ For twins, the risk is higher still: 17% for dizygotic twins and 48% for monozygotic twins.¹⁰

Morbidity studies have found that parents of patients with schizophrenia and psychosis share similar levels of risk of developing schizophrenia, regardless of ethnicity.^{11,12} However, differences arise among siblings of affected patients according to ethnicity: the lifetime risk of developing schizophrenia in siblings of second-generation (UK-born) African-Caribbeans is 17%, in

first-generation African-Caribbeans it is 9%, and in white British patients it is just 2%.¹¹

If genetic predisposition is a substantial factor contributing to high incidence rates of schizophrenia in UK black Caribbeans, then high rates in their country of origin would also be expected. Studies conducted in the 1990s in Jamaica, Trinidad, and Barbados all report similar schizophrenia incidence rates to those found in the native UK population.¹³⁻¹⁵ Based on these studies, it appears that high rates of schizophrenia among black Caribbeans are a feature of the emigrated rather than the native community.

Selective migration

In 1932, Ødegård found that Norwegians emigrating to the US were twice as likely to be admitted to hospital with first-onset schizophrenia as native-born Americans or Norwegians residing in Norway.¹⁶ Subsequent studies have confirmed the high incidence in migrants, demonstrating an overall relative risk of 2.7 in first-generation migrants and 4.5 in second-generation migrants.¹⁷

Ødegård suggested that the raised schizophrenia rates in migrants occurred because those vulnerable to schizophrenia were predisposed to migrate.¹⁶ If this were the case, we would expect to find diminishing schizophrenia rates in post-migration generations, whereas the opposite appears to apply to UK black Caribbeans: studies report higher rates in second-generation African-Caribbeans¹⁸ and other migrant groups.¹⁷ Furthermore, this hypothesis fails to explain why groups such as South Asians, who share the experience of migration, do not have comparably high rates of schizophrenia, or why the rate of schizophrenia in Surinam was not diminished when over one-third of the population migrated to the Netherlands during the 1970s.¹⁹

Misdiagnosis

Early schizophrenia incidence studies did not employ standardised diagnostic criteria, often did not adjust for age and socioeconomic status, and used retrospective case finding and inaccurate population denominators (undercounting of resident ethnic minorities). These methodological problems led to suggestions that excess rates of schizophrenia in the black Caribbean population were simply a methodological artefact.²⁰ However, more-rigorous studies continue to report higher rates in UK black Caribbeans. For example, the AËSOP study used population denominators derived from the 2001 national census (which included detailed ethnic group data and extensive adjustment for under-enumeration), used standardised diagnoses of schizophrenia (International Classification of Disease [ICD]-10 criteria), and reached a diagnosis using 'consensus diagnostic groups' blinded to the ethnicity

of the patient, and monitored for inter-rater and inter-centre reliability.⁶

There are two explanations for misdiagnosis of schizophrenia — ‘clinician bias’, where psychiatrists misinterpret symptoms and overdiagnose schizophrenia, and ‘cultural relativity’, which describes the different ways in which schizophrenia is exhibited in different ethnic and cultural groups.²¹ The former argues that diagnostic bias by clinicians has inflated the true incidence in some ethnic groups. The latter argues that diagnostic differences are due to ethnic differences in the type of symptoms exhibited by schizophrenia.

Like many psychiatric diagnoses, the diagnosis of schizophrenia has a subjective element. To quantify the possibility of clinician bias, the diagnostic patterns of British and Jamaican psychiatrists have been compared.²² The British psychiatrists classified 62% of black Caribbean patients as having schizophrenia, and the Jamaican psychiatrist recorded this diagnosis in 55% of these patients. Although a similar proportion of patients were classified as suffering from schizophrenia, at an individual level, agreement about the diagnosis of schizophrenia in black patients was only reached in 55% of cases. ‘Race thinking’ (resorting to cultural stereotypes),²³ and examples of institutional racism within the mental health service²⁴ (discriminatory practices within an organisation) may also result in a degree of clinician bias in everyday practice.

Cultural differences may also contribute to diagnostic error. At one extreme, Fernando has argued that existing cross-cultural incidence studies are flawed by the ‘category fallacy’ whereby western definitions of mental illness are applied to non-western cultures.²⁵ Differences between cultures in the way hallucinations and religious experiences are regarded may have contributed to excess diagnoses in ethnic minority groups, as many non-western cultural beliefs could be considered to overlap with features of schizophrenia.²⁶ Nevertheless, the features of schizophrenia in western countries are broadly similar across ethnic groups, although one British study found affective symptoms to be more common in black Caribbeans,²⁷ and a US study found an excess of paranoid symptoms in African-Americans.²⁸

Although contributions of clinician bias and cultural relativity to higher rates of schizophrenia in UK black Caribbeans in a routine service setting cannot be excluded, they cannot account for research findings based on standardised diagnostic criteria and diagnostic assessments carried out by ethnically-matched or blinded interviewers.

Health service factors

There are marked differences between African-Caribbean and white British patients with psychosis in terms of their pathways to care. Black Caribbeans

typically follow adverse pathways during their first and subsequent episodes of psychosis:²⁹ they are more likely to experience compulsory admission (odds ratio [OR] = 2.30),³⁰ more likely to be referred to psychiatric services through the criminal justice system (OR = 1.98),³¹ less likely to be referred by their GP (OR = 0.48),³¹ and have more protracted untreated symptoms during the first episode of psychosis³² (although another *ÆSOP* study³³ challenges previous findings of delays in treating psychosis in African-Caribbeans). These ethnic differences may bias results derived from secondary care studies, although they are unlikely to account for much of the ethnic difference in incidence, since over 80% of patients with schizophrenia require hospitalisation within 3 years of the onset of their psychotic symptoms.³⁴

Cannabis use

Evidence is accumulating that cannabis use may be a potent trigger for the development of schizophrenia. A recent meta-analysis has calculated a pooled odds ratio of 2.1 for the development of schizophrenia in cannabis users,³⁵ with the risk being dose related.³⁶ Nevertheless, whether cannabis use is an aetiological factor in schizophrenia remains controversial.

However, there is no clear evidence that cannabis is a factor in the high incidence of schizophrenia in UK black Caribbeans. Psychosis among cannabis users does not appear to be more common in African-Caribbean patients compared to white British patients.³⁷ Patients with schizophrenia in the Netherlands have broadly comparable patterns of cannabis use, regardless of whether they are from the native Dutch population or various migrant groups with high schizophrenia rates such as Moroccans and Surinamese.³⁸ However, case managers surveyed in south London³⁹ reported that black British-born patients with schizophrenia were significantly more likely to be using cannabis than white British patients (OR = 4.8),³⁹ whereas black Africans and black Caribbeans born abroad were less likely to use cannabis (OR = 0.8), suggesting that cannabis may play a role in second- and subsequent-generation African-Caribbeans. Ethnic differences in cannabis use among those who develop schizophrenia have been poorly researched in recent years, and there is a need for studies that include data on more-potent derivatives of cannabis such as ‘skunk’.

Social factors

The association of schizophrenia with unemployment, poverty, and lower social class is well known, but this association appears to be more related to social selection (downward social drift of those with schizophrenia or predisposed to schizophrenia) than social causation (schizophrenia triggered by socioeconomic adversity).⁴⁰ Urbanicity itself is

associated with the incidence of schizophrenia, even allowing for confounding by known socioeconomic indicators, with growing up in an urban environment increasing the risk of developing schizophrenia later on in life by a factor of around 1.7.⁴¹

Since most UK black Caribbeans live in inner-city areas, and growing up in an urban environment contributes to the risk of schizophrenia, it can be argued that undetermined factors operating in an urban environment may account for some of the ethnic variations in incidence.

One factor that has attracted much recent research attention relates to the concept of social capital. Social capital has variously been described as the investment that people make to life within the local community, or 'the glue that holds society together'.⁴² Measures of social capital (voter turnout) and social cohesion (ethnic fragmentation) have been linked with schizophrenia incidence,⁴³ and may therefore contribute to the raised rates in black Caribbeans. Evidence is accumulating that the most socially disorganised neighbourhoods, rather than the poorest neighbourhoods, have the highest incidence of schizophrenia,⁴³ and these may be the areas where black Caribbeans are more likely to live.

Levels of social and family support may also play a role in the excess incidence of schizophrenia in black Caribbeans. In the AESOP study, parental separation and loss before the age of 16 years were found to be strongly associated with the onset of psychosis (OR = 3.4 and 3.2, respectively).⁴⁴ Separation, particularly paternal separation, was more common in black Caribbeans than in the white British population.⁴⁴ In contrast, South Asian family structures are typically close-knit and supportive,⁴⁵ which may offer a protective effect against the development of schizophrenia. Similarly, the Turkish community in the Netherlands has low rates of schizophrenia compared to other immigrant groups and it too is viewed as being socially cohesive, with low rates of single-parent households.⁴⁶

African-Caribbeans living in predominantly white neighbourhoods have been found to have a higher incidence of schizophrenia. This has been termed, the 'ethnic density' effect,⁴⁷ and may be another expression of social isolation.⁴⁸ Individuals living in areas where their own ethnic group constitutes a smaller proportion of the local population have been reported to feel excluded from local social networks and dependent on geographically dispersed, culturally specific, facilities.⁴⁹ Compared to the UK African-Caribbean community, South Asians are less dispersed and less likely to be socially isolated, which may contribute to the relatively low rates of schizophrenia in South Asians.⁵⁰ McKenzie *et al* have suggested that the ethnic density effect may be

explained by higher levels of social capital in ethnically-dense communities.⁴²

Psychological factors

Adversity in many forms appears to contribute to higher rates of schizophrenia, but attitudes to adversity are also likely to play a role. For example, despite there being no difference in the frequency of adverse life events, African-Caribbeans with psychosis are more likely to perceive their adversity as part of a pattern of racial discrimination or as being caused by others and intended (external attribution), rather than being merely the result of ill-fortune without any personal dimension.⁵¹ These attitudes may make individuals more prone to develop schizophrenia by generating a paranoid or defensive outlook on life.⁵² Continual experience of 'social defeat' or 'outsider status' in a competitive society has also been thought to predispose some people to schizophrenia.¹⁷ The association may be one of reverse causality whereby mild paranoia or external attributional styles are themselves the early features of a latent schizophrenia. Prospective studies may be useful in determining the direction of causality; in one longitudinal study, perceived discrimination over a 3-year period predicted the subsequent development of delusional ideas, and this association was found to bear a dose-response relationship, suggesting that discrimination itself may be a trigger to the subsequent development of schizophrenia.⁵³ However, auditory hallucinations were not associated with preceding discriminatory experiences.

Cross-cultural studies in the general UK population shed some light on possible psychological factors. Paranoid ideas may be more common in African-Caribbeans than in the white population in the UK.⁵⁴ Hallucinatory experiences are also more commonly reported in the African-Caribbean community (10%), compared to white (4%) and South Asian (2%) populations.⁵⁵ If indeed there is a spectrum of symptoms within a population that eventually produce full-blown schizophrenia in some individuals, then the precursors appear to be more prevalent in African-Caribbeans.

The interplay between schizophrenia, cognitive processes, and social discrimination may be more complex still. When migrants from countries where the majority of the population is black settle in countries with a white host population, they have a higher incidence rate of schizophrenia (relative risk, 4.8) than migrants from predominantly white countries (relative risk, 2.3) and also than migrants from the Middle East, defined as 'neither black nor white' (relative risk, 2.2).¹⁷ These findings suggest that migrants whose skin colour is substantially darker than that of the native population are more vulnerable to schizophrenia. Racism based on the darkness of skin colour rather

than merely on ethnic grouping may account for these findings, and perceptions of racism have been found to increase according to skin darkness.⁵⁶ Larger visible differences between an ethnic group and the host population may enhance an 'outsider status'.

Psychological factors may also operate at a group rather than individual level. Ethnic minorities differ in the degree to which they are stigmatised by the native population. Members of each ethnic minority group develop an awareness of their identity and status within society. Belonging to an ethnic minority group which perceives high levels of discrimination increases the risk of developing schizophrenia (incidence rate ratios of 4.0 and 1.2 for ethnic minority groups perceiving high and low discrimination, respectively).⁵⁷

CONCLUSION

The high level of schizophrenia in black Caribbeans living in the UK probably reflects the interaction of multiple risk factors, many of which cluster in the black Caribbean community in the UK. Particularly significant factors appear to be the combination of isolation and exclusion, both within society (living in areas of low ethnic density and reduced participation in society) and within the family (family break-up and paternal separation). These factors seem to be more powerful than socioeconomic disadvantage, which is more likely to be a consequence than causal. Racism itself may contribute to social exclusion, increasing the vulnerability to schizophrenia. Biological or genetic susceptibility do not appear to explain high rates of schizophrenia in black Caribbeans. More research is needed about the role of cannabis, particularly in its more potent forms, and whether this contributes to the excess of schizophrenia in black Caribbeans.

Understanding of high rates of schizophrenia in some ethnic groups may be enhanced by an exploration of protective factors. South Asians have experienced migration, problems with cultural assimilation, and sociodemographic disadvantage, and yet they experience only marginally higher rates of schizophrenia than those of the white British population. Further study is needed on whether social cohesion and strong family support or other factors within the South Asian community confer a protective effect.

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Competing interests

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