Understanding the excess of psychosis among the African–Caribbean population in England

Review of current hypotheses

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Background Increased rates of schizophrenia continue to be reported among the African–Caribbean population in England.

Aims To evaluate the competing biological, psychological and social explanations that have been proposed.

Method Literature review.

Results The African–Caribbean population in England is at increased risk of both schizophrenia and mania; the higher rates remain when operational diagnostic criteria are used. The excess of the two psychotic disorders are probably linked: African–Caribbean patients with schizophrenia show more affective symptoms, and a more relapsing course with greater social disruption but fewer chronic negative symptoms, than White patients. No simple hypothesis explains these findings.

Conclusions More complex hypotheses are needed. One such links cultural variation in symptom reporting, the use of phenomenological constructs by psychiatrists and social disadvantage.

Declaration of interest None.

Large-scale migration from the Caribbean countries to England began in the early 1950s and was mainly complete by the mid-1960s. Higher than expected rates of schizophrenia among African–Caribbean people living in England were reported as early as the 1960s (Kiev, 1965; Hemsi, 1967), and consistently thereafter (Bebbington *et al*, 1981; Dean *et al*, 1981; McGovern & Cope, 1987; Cochrane & Bal, 1989).

However, the conclusions that can be drawn from the early studies are limited, since some depended on routine hospital admission data; others did not use operational definitions of schizophrenia; place of birth was not always noted; and ethnicity was rarely recorded, thus excluding all African–Caribbean patients born in the UK (reviewed by Castle *et al*, 1998). The last two factors became particularly important when, in the late 1980s, several studies reported that the rates of schizophrenia were even higher in the England-born children of the immigrants (McGovern & Cope, 1987; Harrison *et al*, 1988).

Studies by Harrison *et al* (1988) and others (Castle *et al*, 1991; Wesseley *et al*, 1991) overcame many of the above methodological problems, but estimating the size of the denominator population from which the cases come remained difficult (Cruickshank & Beevers, 1989). The 1991 UK census was the first to include comprehensive data on the ethnic composition of the general population, and allowed subsequent studies to use a more accurate denominator. A significantly increased incidence of schizophrenia in African–Caribbean people was still found in these later studies (King *et al*, 1994; van Os *et al*, 1996*a*; Bhugra *et al*, 1997).

The above findings are at odds with the incidence rates reported for Caribbean countries. Thus, the incidence of schizophrenia in Jamaica (Hickling & Rodgers-Johnson, 1995), Trinidad (Bhugra *et al*, 1996) and Barbados (Mahy *et al*, 1999) has been found to be similar to the rate for the White population in England.

Thus, an explanation is needed as to why the incidence of schizophrenia is raised in African–Caribbeans living in England not only relative to the host English population but also to their population of origin in the Caribbean.

IS IT REALLY SCHIZOPHRENIA?

Misdiagnosis?

Some researchers have claimed that the high incidence of schizophrenia among African–Caribbean residents in England is due to misdiagnosis by British psychiatrists unfamiliar with Caribbean beliefs (Littlewood & Lipsedge, 1981; Sashidharan, 1993). Lewis *et al* (1990), however, reported that schizophrenia was not overdiagnosed on the basis of ethnicity, and no statistical difference was found between the diagnostic attitudes of foreign and British-trained graduates.

Hickling *et al* (1999) set out to determine which of these views is correct. A group of patients diagnosed by British psychiatrists was then re-diagnosed by a Jamaican psychiatrist. The British psychiatrists diagnosed 55% of the Black patients as having schizophrenia and the Jamaican psychiatrist 52%, not a noticeable difference. However, interestingly, the diagnoses of the British psychiatrists and the African–Caribbean psychiatrist agreed in only 55% of cases. Thus, this study indicates that the routine clinical diagnosis of schizophrenia is not a reliable one, but provides no evidence that it is applied in a racially biased manner.

Are 'psychotic' symptoms more common among African–Caribbeans?

Even though African–Caribbean patients meet the criteria for schizophrenia, this does not necessarily mean that the phenomena they exhibit have the same implications as they would in White patients. Could it be simply that members of the African–Caribbean community more often have symptoms that British psychiatrists are trained to take as evidence for schizophrenia?

Modern Western cultures do not assign credibility to hallucinations, and generally regard them as pathological. However, in many non-Western societies, hallucinatory experiences are not considered bizarre, and are considered 'real' as opposed to 'as if real' (al-Issa, 1995). Thus, individuals from minority groups in Western countries may exhibit a greater readiness

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to report such experiences than the majority population. Indeed, increased frequency and severity of hallucinations and paranoid ideas in Blacks compared with Whites have been reported in the USA (Adebimpe *et al*, 1981, 1982; Mukherjee *et al*, 1983; Lawson *et al*, 1984) and in Britain (Ndetei & Vadher, 1985).

Evidence that this may be the case in the UK-resident African–Caribbean community comes from a study of the general British population. Johns *et al* (1998) analysed a large survey of psychiatric symptoms and found that hallucinations were reported 2.5 times more commonly by people of Caribbean origin (10%) than by the White respondents (4%). An excess of delusional ideation was also found in a small sample of the general African–Caribbean population in Britain, compared with the White population (Sharpley & Peters, 1999).

More affective symptoms?

Leaving aside the symptoms that determine whether individuals qualify for the diagnosis of schizophrenia, African–Caribbean patients with schizophrenia may differ from their White counterparts in other ways. Hutchinson *et al* (1999) carried out a factor analysis of symptoms presented by White and African–Caribbean patients diagnosed as having schizophrenia. There were no differences between the scores of the two groups on five of the six resultant symptom dimensions but the African–Caribbean patients scored more highly on a mixed mania–catatonia dimension. Subsequently, Hutchinson *et al* (2001) looked at ethnic differences in symptom presentation among a broader group of patients with psychosis. African–Caribbean patients were found to present more often with coexistent depression and anxiety, de-realisation and a loss of affect or feeling. These findings suggest that psychotic illness in this group may be characterised by a non-specific affective component, which may be difficult to recognise without specific enquiry.

Interestingly, African–Caribbean residents in England have previously been reported as being at increased risk for mania (Leff *et al*, 1976; Hunt *et al*, 1993), and especially schizomania (van Os *et al*, 1996*b*); it has been suggested that the latter may be a 'reactive mania', a type of stress reaction (Tyrer, 1982). Further support for the idea that African–Caribbean patients with a predominantly affective illness may be at risk of receiving a diagnosis of schizophrenia comes from the finding that African–Caribbean patients with manic depression are more likely than their White counterparts to exhibit Schneiderian first-rank symptoms and to have mood-incongruent delusions (Kirov & Murray, 1999).

Does different outcome mean a different illness?

A further way of establishing whether patients who receive the same diagnosis have the same underlying illness is to examine their outcome (Thakker & Ward, 1998). McGovern & Cope (1991) noted that features suggestive of a more atypical psychosis in British African–Caribbean patients include a significant excess of acute-onset illnesses (usually associated with a good outcome), and a lower proportion of patients with first-rank symptoms; also a larger proportion have a change of diagnosis during admission, suggesting clinicians have more difficulty with diagnosis. However, evidence suggestive of more typical schizophrenia among African–Caribbean patients included their tendency to have more prolonged symptoms and admissions, a stronger family history and a large number of readmissions.

Harvey *et al* (1990) and Sugarman (1992) found few differences in terms of symptoms, social functioning and course of illness between White and African–Caribbean patients with schizophrenia. In contrast, Birchwood *et al* (1992) and McGovern *et al* (1994) reported better outcomes for African–Caribbean patients. Harrison *et al* (1999) found a non-significant trend at 3-year follow-up for African–Caribbean subjects to have more affective symptoms and a shorter duration of initial episode, and to experience fewer, less severe psychotic symptoms at follow-up; the trend for better overall course for the African–Caribbean patients further improved when confounding variables were adjusted for.

McKenzie *et al* (1995) conducted a 4-year follow-up study of patients with recent-onset psychosis and found that the African–Caribbean subjects spent significantly more time in a recovered state, were less likely to have had a continuous, unremitting illness and were less at risk of self-harm and suicide; on the other hand, they suffered more imprisonments and compulsory admissions. Thus, the outcome for African–Caribbean patients was not so much better as different.

Takei *et al* (1998) conducted an 18-year follow-up of African–Caribbean and White patients with psychosis. Diagnostic consistency between the two groups across the period was not significantly different and identical proportions were diagnosed as 'psychotic' at follow-up. However, again the African–Caribbean subjects had had more compulsory admissions and showed a tendency to have fewer negative symptoms, as well as more symptom-related dysfunctioning and more limited leisure activity.

Thus, there is some suggestion that African–Caribbean patients diagnosed as having schizophrenia tend to have more relapsing and remitting illnesses, more affective symptoms and more social disturbance, but fewer negative and persistent symptoms than their White counterparts (McKenzie & Murray, 1999).

BIOLOGICAL HYPOTHESES

Genetic predisposition

Since schizophrenia is generally thought to be under considerable genetic influence, genetic predisposition among the African–Caribbean population has been investigated. Both Sugarman & Craufurd (1994) and Hutchinson *et al* (1996) found that the morbid risk for schizophrenia was similar for parents and siblings of White and first-generation British African–Caribbean patients with schizophrenia, and for the parents of second-generation African–Caribbean probands. However, the siblings of second-generation schizophrenia probands had a morbid risk for schizophrenia that was markedly higher than that of their White counterparts. This implies that strong environmental factors are acting on second-generation African–Caribbeans, and suggests that individuals from certain families may be particularly vulnerable (Hutchinson *et al*, 1996).

Predisposition to migration

A related hypothesis suggests that the genetic predisposition to develop schizophrenia is associated with the tendency to migrate (Odegaard, 1932). Thomas *et al* (1993) have further suggested that intermarriage among genetically predisposed, first-generation immigrants may lead to even higher rates in their children. However, the Canadian Taskforce study (Canadian Taskforce on Mental Health Issues, 1988), which comprehensively reviewed the migration literature, concluded that there are equal numbers of

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studies demonstrating that immigrants do and do not have higher rates of mental illness than the native population.

Such contradictory findings may be due to the fact that individuals migrate for widely different reasons – to avoid persecution, because of dissatisfaction with the political regime in their own country, and in search of better educational and economic opportunities. It cannot even be assumed that those moving country as part of a group migration all share the same motives or lifestyle (Murray & Hutchinson, 1999). Furthermore, the experience of migration can be positive or negative, and can have different impacts on the mental health of individuals depending on many factors, including their gender and age and socio-economic and cultural factors in the country of reception (Cheng & Chang, 1999).

Prenatal and perinatal complications

Prenatal and perinatal complications are associated with an increased risk of later schizophrenia (reviewed by Geddes & Lawrie, 1995; McGrath & Murray, 1995). Hutchinson *et al* (1997) examined the frequency of obstetric complications in a series of patients with psychosis in London; these were almost twice as common in White as in African–Caribbean patients. Thus, obstetric risk plays no greater role, and possibly a lesser role, in the aetiology of schizophrenia in African–Caribbean compared with White patients in England.

Prenatal viral infections have also been proposed as potential neurodevelopmental hazards increasing the risk of later schizophrenia (Mednick *et al*, 1988; O'Callaghan *et al*, 1991). Individuals brought up in the Caribbean islands in the immediate post-war period had little immunity to certain viruses such as rubella, since the island populations were too small to sustain endemic infection. African–Caribbean young women who migrated to the UK during the 1950s were highly susceptible to rubella (Nicoll & Logan, 1989), with resultant high rates of congenital rubella in their children (Parsons, 1963). A similar model has also been applied to schizophrenia (Glover, 1989; Harrison, 1990) but no convincing evidence has been produced.

Risk factors in childhood

Children who later develop schizophrenia have lower mean IQs, more personality and interpersonal problems than their peers, an excess of conduct disorder and low educational achievement (Jones *et al*, 1994; Davies *et al*, 1998). Thus, it may be relevant that African–Caribbean children in England achieve less academically and have higher rates of diagnosed learning disability compared with the population as a whole (Wing, 1979). Furthermore, African–Caribbean children in London are more likely than White children to have been exposed to social factors known to be associated with childhood psychiatric disorder. African–Caribbean children with diagnoses of psychiatric disorders are especially likely to have had such experiences: for example, coming from one-parent families, separation from parents, and being in children's homes or foster care (Maughan, 1989). The aetiological significance of these factors in African–Caribbeans is unclear.

Cannabis use

Excessive use of cannabis has been proposed as a risk factor for both psychosis in general and for the excess found in the African–Caribbean population. However, controversy surrounds both claims (Ghodse, 1986; Thornicroft, 1990; McGuire *et al*, 1994).

The most convincing work on the general question comes from Andreasson *et al* (1987), who conducted a 15-year prospective study on the risk of schizophrenia among cannabis users compared with non-users. Cannabis was found to be an independent risk factor for schizophrenia. Furthermore, some patients seem particularly prone to an acute psychotic relapse after taking cannabis (Treffert, 1978; Turner & Tsuang, 1990).

When Callan & Littlewood (1998) asked the relatives of Black and White patients about the cause of the illness, the relatives of the former significantly more often blamed it on cannabis misuse. This could be because they have more knowledge about the effects of cannabis, as it has been used more widely and for longer in the Caribbean, where it is commonly believed to cause psychosis (Littlewood, 1998).

In contrast, McGuire *et al* (1995) did not find any significant difference in the frequency with which cannabis was used by African–Caribbean patients compared with White patients with psychosis. Furthermore, research conducted in the Netherlands (Selten & Sijben, 1994; Selten *et al*, 1997) found that consumption of cannabis was lower among immigrants of Caribbean origin than among the native population although their incidence of schizophrenia was higher. In short, the evidence concerning cannabis is confusing.

SOCIAL HYPOTHESES

Urban effect?

The association between deprived, run-down inner-city areas and high rates of psychiatric admissions in general (Ineichen *et al*, 1984; Giggs & Cooper, 1987) and schizophrenia in particular is well known. In recent years, several studies have suggested that this is not simply a consequence of social drift or social residue (Freeman, 1994) and have claimed that being born or brought up in the city increases the risk of schizophrenia (Lewis *et al*, 1992; Marcellis *et al*, 1998). Possible explanations have included: social factors that may be more common in cities, for example stressful life events (Brown & Prudo, 1981), social isolation (Burnett *et al*, 1999), overcrowding (Magaziner, 1988), overstimulation (Wing, 1989), higher crime levels (Dekker *et al*, 1997) and lower socio-economic class (Castle *et al*, 1993); physical factors more common in cities, for example exposure to air, lead or other pollutants (Freeman, 1994; Dekker *et al*, 1997); and biological factors such as low birthweight, and prenatal maternal and other infections (Jablensky, 1988; Torrey & Bowler, 1991; Takei *et al*, 1992).

Since the majority of African–Caribbean people in the UK live in inner cities, the high incidence could be an effect of urban living rather than ethnicity *per se*. Harrison *et al* (1988) did not find area of residence capable of explaining the elevated rates of schizophrenia in the African–Caribbean population. However, it could be argued that even within inner-city areas, African–Caribbean people are more often subjected to adverse social factors such as social isolation, stressful life events (Brown & Prudo, 1981), lower socio-economic class (Castle *et al*, 1993) and greater levels of unemployment (Bhugra *et al*, 1997).

Social disadvantage?

The social systems in a community have a profound influence on people's health (Patrick & Wickizer, 1995; Lomas, 1998). Such systems include the community's physical and social structure and social cohesion (otherwise known as social

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capital – Putnam, 1995). These can either encourage or discourage mutual support or caring, self-esteem, a sense of belonging and enriched social relationships. Social cohesion or capital is the product of the adequacy of the physical and social structure in a community; it is defined by levels of trust of fellow citizens, norms of reciprocity and the extent of membership of various voluntary groups and associations. Thus, social capital can be seen to facilitate cooperation for mutual benefit (Kawachi *et al*, 1997; Lomas, 1998).

Not only do African–Caribbean people living in the UK suffer considerable social disadvantages, but it can be argued that the social structure of their community appears compromised relative to other groups; for example, they have more single-parent families, more separation from parents, and greater experience of being in children's homes or foster care (Cox, 1977; Littlewood & Lipsedge, 1982; Maughan, 1989). More people live alone (Burnett *et al*, 1999), more are unemployed (Bhugra *et al*, 1997) and more are imprisoned: any of these factors may result in a form of social exclusion. Furthermore, it has been suggested that racism may swell feelings of relative deprivation and further increase the susceptibility to poor health (Nazroo, 1998).

Pathways to care

The pathway to psychiatric care of African–Caribbean patients with schizophrenia in the UK involves an excess of police involvement, a low level of general practitioner involvement and a greater use of compulsory admission (Rwegellera, 1980; Harrison *et al*, 1989; Davies *et al*, 1996).

Studies have shown that the police recognise mental disturbance appropriately (Rogers & Faulkner, 1987; Dunn & Fahy, 1990) but they do not explain the differential detention of one group over another. Some of the excess may be due to African–Caribbean patients not seeking a general practitioner's help early on in their illness, with resultant need for later and more dramatic intervention by the emergency services (Harrison *et al*, 1989; Owens *et al*, 1991). With regards to compulsory admission, young Black men are stereotypically seen as being more threatening and disturbed, which may contribute to the increased rates among this group (Pipe *et al*, 1991).

When considering first-onset psychosis cases, the situation appears to be somewhat different. Cole *et al* (1995) looked specifically at this group and found that ethnicity did not significantly determine pathways to care, although a trend towards more compulsory admission was found for the Black group. Instead, police involvement, compulsory admissions and police Section 136 (of the Mental Health Act 1983) were all strongly associated with the absence of GP involvement and of help-seeking from a friend or relative. Similarly, Burnett *et al* (1999) found that unemployment, living alone and living in public housing, rather than ethnicity, were all significantly associated with compulsory admission. However, African–Caribbean patients were much more likely to be readmitted compulsorily than Whites; Burnett *et al* suggested that low levels of general practitioner involvement among African–Caribbean patients may contribute to the differential rates of compulsory admission over the course of the illness.

Thus, differences in pathways to and through care are due to a combination of social factors, the structure of and access to care and, possibly, the experience of care received.

Patients' and relatives' opinion

Could patients' and relatives' views of psychiatric services play a part in elevating rates of psychosis? McGovern & Hemmings (1994) found no significant differences between African–Caribbean and White patients and relatives in satisfaction with psychiatric services; the great majority of Black and White patients and relatives conceptualised the patient as 'mentally ill', and agreed with the use of compulsory admission (Mercer, 1986). Similarly, Leavey *et al* (1997) did not find any significant differences between Black and White patients' levels of satisfaction with care.

Despite overall satisfaction, Blacks were more likely than Whites to see the service as racist (McGovern & Hemmings, 1994). Parkman *et al* (1997) found that second-generation African–Caribbean patients were significantly less satisfied with services when compared with older Caribbean-born African–Caribbean and White patients. Importantly, they found that the number of previous admissions significantly predicted dissatisfaction among the African–Caribbean group. Thus, it could be that dissatisfaction develops over time.

Negative attitudes to services may be the reason for the delay in presentation with symptoms. This delay may lead to more florid symptomatology than would otherwise be present in African–Caribbean patients.

Racism

Racism is an attractive explanation for the increased rates of psychotic illness in African–Caribbeans in the UK. It has effects on their physical, social and psychological environment (Williams, 1996). Its effects cross generations (Laviest, 1993; David & Collins, 1997). It compounds the effects of gender and social class (Lillie-Blanton & Laviest, 1996). The UK literature is sparse, but in the USA the experience of racism has been shown to influence the perception of self and of community (Wallace *et al*, 1996; Kennedy *et al*, 1997). Studies have not linked racism aetiologically to psychotic illness, but thwarted aspirations have been linked to psychological stress (Parker & Kleiner, 1966) and the persistent, prolonged struggle and failure to overcome difficulties of blocked opportunities ('John Henryism') has been linked to a decrease in psychological well-being – although not as yet to operationally defined mental ill-health (James, 1994). A discrepancy between occupational status and an ability to maintain the appearances of a successful lifestyle has been linked to depression in young African Americans, and a link between internalised racial stereotypes and depression and alcohol misuse has been described (Neighbors *et al*, 1996; Williams-Morris, 1996).

Racism has community and societal meanings and correlates. At an ecological level, frustration and disillusionment of individuals could lead to alternative economies and lifestyles that undermine the family and are associated with low social cohesion (Kennedy *et al*, 1997). Reduced social buffers and social disorganisation are linked to poorer mental health (Taylor *et al*, 1991).

The links between racism, identity and psychological development in children are a current area of interest but associations between these factors and physical and mental illness have yet to be assessed (Taylor *et al*, 1991).

The effects of discrimination depend on the socio-economic status and coping strategies of the individual (Taylor *et al*, 1991).

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Institutional racism could encompass a number of factors already discussed – from the understanding and meaning of psychopathology through to differences in pathways to care. However, its impact on the incidence of psychotic illness remains unclear (McKenzie, 1999).

Problems with social hypotheses

If higher rates of psychosis, why not of neurosis?

A puzzling thing about the social hypotheses that attempt to explain the excess of psychosis among the African–Caribbean community is that many of the factors suggested are associated, in the general population, with an increased risk of non-psychotic disorders such as depression, anxiety and functional somatic symptoms rather than psychotic disorders (Goldberg & Huxley, 1992). Yet UK-resident African–Caribbean people appear much less likely to receive a diagnosis of anxiety or depression from their general practitioner than non-Black attenders (Gillam *et al*, 1989).

It could be that background levels of morbidity in these populations differ; other suggestions include the possibility that African–Caribbeans seek professional help less often (Rathwell, 1984; Gillam, 1990), and/or general practitioners fail to notice their psychiatric morbidity (Burke, 1984; Nazroo, 1998), possibly due to more frequent somatic presentation for psychological distress (Kleinman, 1980; Leff, 1988). Alternatively, African–Caribbean people may not frame their distress in psychological terms because of the accompanying stigma (Rack, 1982), or they may not seek help because having the stresses of living with discrimination redefined as neurotic illness is unacceptable (Lloyd & St Louis, 1992). The results of recent community-based attempts to calculate the rate of neurotic illness in African–Caribbeans have been equivocal. The National Psychiatric Morbidity Survey of Great Britain (Jenkins *et al*, 1997) found no significant difference in the prevalence rates of neurotic illness between African–Caribbeans and Whites, but it may have had too small a sample. Nazroo (1997) found a 60% higher prevalence of depression in a community sample of African–Caribbeans when compared with Whites, and Shaw *et al* (1999) also reported a higher prevalence of depression in similar samples although the overall rate of neurotic illness was not elevated.

Why are rates of psychosis not elevated among UK-resident South Asians?

Some of the socio-economic and cultural factors offered as reasons for the increased rate of mental illness among African–Caribbeans could be expected to have the same impact on UK-resident South Asian populations, whose migration to England coincided with the period of African–Caribbean immigration and who are subject to similar discrimination (Bhugra *et al*, 1997). Although there have been isolated studies reporting an increased incidence of psychosis in Asians living in the UK (King *et al*, 1994), the majority view is that rates in the Asian population are either the same as those of the indigenous White population or only minimally raised (Cochrane & Bal, 1987; Bhugra *et al*, 1997).

One suggestion has been that exposure to the indigenous British culture with resultant acculturation may result in psychological problems and that an insular lifestyle may protect against such stresses (Westermeyer *et al*, 1983). Some South Asian groups may, therefore, find protection in their close-knit cultural, religious and family practices. In comparison, African–Caribbeans have originated from a more fragmented cultural and religious background (Nettleford, 1972). If this theory were correct, then one would predict that as South Asians assimilate British culture and lose their distinctive religious and cultural practices, higher rates of psychosis should be found in the second and third generations of Asians. There is no evidence of this.

Other arguments cannot be dismissed so readily. Cochrane (1977, 1983) speculates that migration from the Indian subcontinent is a complex and restricted practice that deters all but the most determined and psychologically robust; this would result in lower psychiatric morbidity among Asian migrants. Second, Asians do not suffer from the high rates of unemployment that affect the African–Caribbean immigrants (Cochrane, 1977, 1983; Bhugra *et al*, 1997). Indeed, the improved socio-economic status and upward mobility among the UK-resident South Asian population could act to maintain well-being.

PSYCHOLOGICAL HYPOTHESES

Interpretation of life events

Since adverse life events are known to lead to the emergence of psychotic symptoms in susceptible individuals (Bebbington *et al*, 1993), researchers have wondered whether African–Caribbean residents in the UK might experience an excess of such events. Gilvarry *et al* (1999) examined the frequency of adverse life events experienced by a multi-ethnic series of patients with chronic psychosis, but reported no difference in the number of life events experienced by the different ethnic groups.

However, importantly, African and African–Caribbean patients were more likely to interpret such events as part of a pattern of continuous adversity experienced by them on account of their ethnicity. For example, individuals would perceive difficulties with their housing as part of a pattern of racial discrimination by the housing authorities. A tendency to attribute such motives to others could be a response to previous discriminatory experiences. In the USA minor daily experiences of racism ('micro-aggressions') rather than larger life events have been linked to health status. Such micro-aggressions have not been studied in the UK (Williams, 1996).

Attributional style

The idea that a person's perceptual or attributional style may predispose that person to schizophrenia has a long history (Schneider, 1959; Colby *et al*, 1979; Garfield *et al*, 1987; Robey *et al*, 1989), but has been recently popularised by Bentall and colleagues (Bentall *et al*, 1988, 1994; Kinderman & Bentall, 1996). According to Bentall *et al* (1994), individuals experiencing delusions have an underlying concept of themselves which is negative. This concept is activated when the individual is subjected to threatening life events, and in turn results in a discrepancy between the actual self (i.e. how the person is in reality) and the ideal self (how the person would like to be). Individuals who have delusions attempt to minimise this discrepancy by readjusting their concept of themselves so that they perceive themselves satisfactorily at the expense of perceiving others as having a negative view of them. As a result, they falsely conclude that negative events are caused by others (external attribution) rather than themselves, i.e. 'others are to blame for the negative things that happen to me'.

Kinderman & Bentall (1996) suggest that the repeated use of such external attributions can lead to the discrepancies between self-perceptions and beliefs about the

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perceptions of others becoming manifest, in extreme form, as persecutory delusions.

It could be argued that such mechanisms may be more important among African–Caribbean residents in England. First, there can be no doubt that there is racial discrimination and therefore it is reasonable for individuals to question whether encountered social adversity is a manifestation of this. Second, poor school achievement (Wing, 1979), more family disruption (Maughan, 1989), high levels of unemployment and relative deprivation (Bhugra *et al*, 1997) and growing up in a discriminatory society provide fertile ground for problems with self-perception and identity, as users testify (Frederick, 1991). In some, these may work with as yet ill-defined sociocultural factors and with continuing threatening life experiences to produce a greater use of externalising attributions to protect self-esteem. As discussed above, this normative process can result in paranoid ideation. Some support for this speculation comes from a small study of the general population in which Sharpley & Peters (1999) found that proto-delusional paranoid and grandiose ideas were more common among African–Caribbean subjects compared with Whites.

The importance of attributional style is that it offers a pathway through which discrimination and social adversity may lead to increased diagnosed rates of mental illness. However, it cannot be seen as an explanation for increased rates *per se*: the reason for the increased rates would be the social situations that foster the need for externalising attributions. The problem is not in individuals or their communities but in the wider social forces acting on those communities.

CONCLUSION

There is no doubt that African–Caribbean people resident in England are at higher risk of developing an illness that meets operational criteria for schizophrenia than (a) the populations in their countries of origin in the Caribbean and (b) the White, indigenous population. Hypotheses to date have failed to take account of this finding. However, hallucinations and paranoid ideas conventionally considered as pathognomonic of psychosis may be more common among African–Caribbean people than in the remainder of the population in England; this raises the question of whether the threshold for qualifying for a diagnosis of schizophrenia is set lower for the African–Caribbean population.

African–Caribbean individuals who are diagnosed as having schizophrenia show a greater affective component to their illness than do their White counterparts. Some evidence also suggests that schizophrenia in this population is associated with a more relapsing and remitting course, with more social disruption and fewer negative symptoms than in White patients. This pattern of illness conforms more, in some ways, to schizoaffective psychosis than to chronic schizophrenia. In this context it is particularly interesting that African–Caribbean people living in England also suffer an elevated rate of mania. It would be surprising if the increased incidence of these two disorders were not in some way linked.

It is therefore perhaps more accurate not to describe the illness common among African–Caribbeans resident in England as classical 'schizophrenia', but to say that this group experiences an excess of a 'type' of psychosis, which may present phenomenologically as either schizophrenia or mania, but whose classification and pathogenesis are unclear at present. A number of explanatory hypotheses have been put forward, some tested more systematically than others.

While psychosis is generally thought to be partly under genetic influence, the excess in the African–Caribbean population cannot be explained exclusively in genetic terms or by the selective migration of individuals who later develop psychosis. The frequency of schizophrenia in the siblings of second-generation patients with schizophrenia implies the operation of environmental factors upon individuals from vulnerable families.

What could these environmental factors be? Neurodevelopmental hazards appear, if anything, to be less common in African–Caribbean than in White patients diagnosed as having schizophrenia. The significance of cannabis misuse is not yet resolved, but if it does play an aetiological role, it is likely to be as a contributory rather than a major factor.

Sociocultural factors have been the subject of much untested speculation. More single-parent families, poorer school achievement, high unemployment, more solitary living and less social support among the African–Caribbean community have all been blamed, and could contribute to a lower threshold for social disruption. However, social theorists need to explain: (a) why such factors are more commonly associated with neurotic illness in the majority population but not in the African–Caribbean population; and (b) why no consistent excess of psychosis has been reported in South Asian residents, who are subject to many of the same social stresses and discrimination as the African–Caribbean population.

Bentall and colleagues suggest that paranoia is a defence against poor self-esteem and can, therefore, be regarded as a form of camouflaged depression (Kaney & Bentall, 1992; Kinderman *et al*, 1992). In their model, it arises from an abnormal attributional style in which the blame for threatening events is continually externalised. Zigler & Glick (1988) contend that mania also provides a means whereby individuals can avoid negative self-evaluations through an exaggerated sense of self-fulfilment.

Some African–Caribbean patients with psychosis perceive adverse life events as part of a continuous pattern of adversity directed at them on the basis of their ethnicity. African–Caribbean patients may be more at risk of developing this particular style of attribution, because their experience of social disadvantage and racial discrimination in the UK results in: (a) a need to question self-perception and identity; and (b) more threat in their everyday social life. The fact that affective symptoms are more commonly found among African–Caribbean than White patients with psychosis is compatible with the idea that such paranoid attributions are being employed as a defence against depression and negative self-evaluation.

It is important to ascertain the causes of the high incidence of psychosis among African–Caribbean people living in England because it represents a considerable burden on an already deprived population. If we could understand the factors that drive this high incidence of psychosis, then we might be able to initiate preventative measures. Furthermore, we might also learn more about the aetiology of psychosis in general. Already the preliminary findings are intriguing in that they point towards social and cognitive factors, areas of research into psychosis that have been neglected in recent years.

REFERENCES

Adebimpe, V. R., Klein, H. E. & Fried, J. (1981)
Hallucination and delusions in black psychiatric patients. *Journal of the National Medical Association*, **73**, 517–520.

https://doi.org/10.1192/bjp.178.40.s60 Published online by Cambridge University Press

___, Chu, C. C., Klein, H. E., *et al* (1982) Racial and geographic differences in the psychopathology of schizophrenia. *American Journal of Psychiatry*, **139**, 888–891.

al-Issa, I. (1995) The illusion of reality or the reality of illusion. Hallucinations and culture. *British Journal of Psychiatry*, **166**, 368–373.

Andreasson, S., Allebeck, P. & Engstrom, A. (1987) Cannabis and schizophrenia: a longitudinal study of Swedish conscripts. *Lancet*, *ii*, 1483–1485.

Bebbington, P. E., Hurry, J. & Tennant, C. (1981) Psychotic disorders in selected immigrant groups in Camberwell. *Social Psychiatry*, **16**, 43–51.

___, Wilkins, S., Jones, P., *et al* (1993) Life events and psychosis. Initial results from the Camberwell Psychosis Study. *British Journal of Psychiatry*, **162**, 72–79.

Bentall, R. P., Jackson, H. F. & Ilgrim, D. (1988) Abandoning the concept of schizophrenia: some implications of validity arguments for psychological research into psychotic phenomena. *British Journal of Clinical Psychology*, **27**, 303–324.

___, Kinderman, P. & Kaney, S. (1994) The self, attributional processes and abnormal beliefs: towards a model of persecutory delusions. *Behaviour Research and Therapy*, **32**, 331–341.

Bhugra, D., Hilwig, M., Hossein, B., *et al* (1996) First-contact incidence rates of schizophrenia in Trinidad and one-year follow-up. *British Journal of Psychiatry*, **169**, 587–592.

___ Leff, J., Mallet, R., *et al* (1997) Incidence and outcome of schizophrenia in whites, African–Caribbeans and Asians in London. *Psychological Medicine*, **27**, 791–798.

Birchwood, M., Cochrane, R., MacMillan, F., *et al* (1992) The influence of ethnicity and family structure on relapse in first-episode schizophrenia. A comparison of Asian, Afro-Caribbean and white patients. *British Journal of Psychiatry*, **161**, 783–790.

Brown, G. W. & Prudo, R. (1981) Psychiatric disorder in a rural and an urban population. I. Aetiology of depression. *Psychological Medicine*, **11**, 581–599.

Burke, A. (1984) Racism and psychiatric disturbance among West Indians in Britain. *International Journal of Social Psychiatry*, **30**, 50–68.

Burnett, R., Mallett, R., Bhugra, D., *et al* (1999) The first contact of patients with schizophrenia with psychiatric services: social factors and pathways to care in a multi-ethnic population. *Psychological Medicine*, **11**, 581–599.

Callan, A. & Littlewood, R. (1998) Patient satisfaction: ethnic origin or explanatory model? *International Journal of Social Psychiatry*, **44**, 1–11.

Canadian Taskforce on Mental Health Issues (1988) *After the Door Has Opened*. Ottawa: Ministry of Supply and Services.

Castle, D., Wessely, S., Der, G., *et al* (1991) The incidence of operationally defined schizophrenia in Camberwell, 1965–1984. *British Journal of Psychiatry*, **159**, 790–794.

___, Scott, K. & Wessely, S. (1993) Does social deprivation during gestation and early life predispose to later schizophrenia? *Social Psychiatry and Psychiatric Epidemiology*, **28**, 1–4.

___, Wessely, S., Van Os, J., *et al* (1998) *Psychosis in the Inner City: The Camberwell First Episode Study*. Maudsley Monograph. Hove: Psychology Press.

Cheng, A. T. A. & Chang, J. C. (1999) Mental health aspects of culture and migration (editorial review). *Current Opinions in Psychiatry*, **12**, 217–222.

Cochrane, R. (1977) Mental illness in immigrants to England and Wales: an analysis of mental hospital admission 1971. *Social Psychiatry*, **12**, 25–35.

___ (1983) *The Social Creation of Mental Illness*. London: Longman.

___ & Bal, S. S. (1987) Migration and schizophrenia: an examination of five hypotheses. *Social Psychiatry*, **22**, 181–191.

___ & ___ (1989) Mental hospital admission rates of immigrants to England. *Social Psychiatry and Psychiatric Epidemiology*, **24**, 2–11.

Colby, K. M., Fraught, W. S. & Parkinson, R. C. (1979) Cognitive therapy of paranoid conditions: heuristic suggestions based on a computer simulation model. *Cognitive Therapy and Research*, **3**, 55–60.

Cole, E., Leavey, G., King, M., *et al* (1995) Pathways to care for patients with a first episode of psychosis. A comparison of ethnic groups. *British Journal of Psychiatry*, **167**, 770–776.

Cox, J. L. (1977) Aspects of transcultural psychiatry. *British Journal of Psychiatry*, **130**, 211–221.

Cruickshank, J. & Beevers, D. (1989) *Ethnic Factors in Health and Disease*. Sevenoaks: Wright.

David, R. & Collins, J. W. Jr (1997) Differing birth weight among infants born of US born blacks, African born blacks and US born whites. *New England Journal of Medicine*, **337**, 1209–1214.

Davies, N., Russel, A., Jones, P., *et al* (1998) Which characteristics of schizophrenia predate psychosis? *Journal of Psychiatric Research*, **32**, 121–131.

Davies, S., Thornicroft, G., Leese, M., *et al* (1996) Ethnic differences in risk of compulsory psychiatric admission among representative cases of psychosis in London. *British Medical Journal*, **312**, 533–537.

Dean, G., Walsh, D., Downing, H., *et al* (1981) First admission of native born and immigrants to psychiatric hospitals in South-East England 1976. *British Journal of Psychiatry*, **139**, 506–512.

Dekker, J., Peen, J., Gardien, R., *et al* (1997) Urbanisation and psychiatric admission rates in the Netherlands. *International Journal of Social Psychiatry*, **43**, 235–246.

Dunn, J. & Fahy, T. A. (1990) Police admissions to a psychiatric hospital. Demographic and clinical differences between ethnic groups. *British Journal of Psychiatry*, **156**, 373–378.

Frederick, J. (1991) *Positive Thinking for Mental Health*. London: The Black Mental Health Group.

Freeman, H. (1994) Schizophrenia and city residence. *British Journal of Psychiatry*, **164** (suppl. 23), 39–50.

Garfield, D. A., Rogoff, M. L. & Steinberg, S. (1987) Affect recognition and self-esteem in schizophrenia. *Psychopathology*, **20**, 225–233.

Geddes, J. R. & Lawrie, S. M. (1995) Obstetric complications and schizophrenia: a meta-analysis. *British Journal of Psychiatry*, **167**, 786–793.

Ghodse, H. (1986) Cannabis psychosis. *British Journal of Addiction*, **81**, 473–478.

Giggs, J. A. & Cooper, J. E. (1987) Ecological structure and the distribution of schizophrenia and affective psychoses in Nottingham. *British Journal of Psychiatry*, **151**, 627–633.

Gillam, S. (1990) Ethnicity and the use of health services. *Postgraduate Medical Journal*, **66**, 989–993.

___, Jarman, B., White, P., *et al* (1989) Ethnic differences in consultant rates in urban general practice. *British Medical Journal*, **299**, 953–958.

Gilvarry, C., Walsh, E., Samele, C., *et al* (1999) Life events and perceptions of racism in a sample of community care patients with psychotic illnesses. *Social Psychiatry and Psychiatric Epidemiology*, **24**, 49–56.

Glover, G. R. (1989) The pattern of psychiatric admission of Caribbean-born immigrants in London. *Social Psychiatry and Psychiatric Epidemiology*, **24**, 49–56.

Goldberg, G. D. & Huxley, P. (1992) *Common Mental Disorders. A Biosocial Model*. London: Routledge.

Harrison, G., Owens, D., Holton, A., *et al* (1988) A prospective study of severe mental disorder in Afro-Caribbean patients. *Psychological Medicine*, **18**, 643–657.

___, Holton, A., Nielson, D., *et al* (1989) Severe mental disorder in Afro-Caribbean patients: some social, demographic and service factors. *Psychological Medicine*, **19**, 683–696.

___ (1990) Searching for the causes of schizophrenia: the role of migrant studies. *Schizophrenia Bulletin*, **16**, 663–671.

___, Amin, S., Singh, S. P., *et al* (1999) Outcome of psychosis in people of African–Caribbean family origin. Population-based first-episode study. *British Journal of Psychiatry*, **175**, 43–49.

Harvey, I., Williams, M., McGuffin, P., *et al* (1990) The functional psychoses in Afro-Caribbeans. *British Journal of Psychiatry*, **157**, 515–522.

Hemsi, L. K. (1967) Psychotic morbidity of West Indian immigrants. *Social Psychiatry*, **2**, 95–100.

Hickling, F. W. & Rodgers-Johnson, P. (1995) The incidence of first-contact schizophrenia in Jamaica. *British Journal of Psychiatry*, **167**, 193–196.

___, McKenzie, K., Mullen, R., *et al* (1999) A Jamaican psychiatrist evaluates diagnosis at a London psychiatric hospital. *British Journal of Psychiatry*, **175**, 283–285.

Hunt, N., Adams, S., Coxhead, N., *et al* (1993) The incidence of mania in two areas in the United Kingdom. *Social Psychiatry and Psychiatric Epidemiology*, **28**, 281–284.

Hutchinson, J., Takei, N., Fahy, T. A., *et al* (1996) Morbid risk of schizophrenia in first-degree relatives of white and African–Caribbean patients with psychosis. *British Journal of Psychiatry*, **169**, 776–780.

___, ___, Bhugra, D., *et al* (1997) Increased rate of psychosis among African–Caribbeans in Britain is not due to an excess of pregnancy and birth complications. *British Journal of Psychiatry*, **171**, 145–147.

___, ___, Sham, P., *et al* (1999) Factors analysis of symptoms in schizophrenia: differences between white and Caribbean patients. *Psychological Medicine*, **29**, 607–612.

___, ___, ___, *et al* (2001) Racial differences in symptom presentation among psychotic patients in South London. *Schizophrenia Research*, in press.

Ineichen, B., Harrison, G. & Morgan, H. G. (1984) Psychiatric admissions in Bristol. I. Geographical and ethnic factors. *British Journal of Psychiatry*, **145**, 600–604.

Jablensky, A. (1988) Schizophrenia and environment. In *Handbook of Social Psychiatry* (eds A. S. Henderson & G. D. Burrows). Amsterdam: Elsevier.

James, A. (1994) John Henryism and the health of African-Americans. *Culture Medicine and Psychiatry*, **18**, 163–182.

Jenkins, R., Lewis, G., Bebbinton, P., *et al* (1997) The National Psychiatric Morbidity Surveys of Great Britain – initial findings from the household survey. *Psychological Medicine*, **27**, 775–789.

https://doi.org/10.1192/bjp.178.40.s60 Published online by Cambridge University Press

Johns, L. C., Nazroo, J. Y., Bebbington, P., *et al* (1998) Occurrence of hallucinations in a community sample. *Schizophrenia Research*, **29**, 23.

Jones, P., Rodgers, B. & Murray, R. M. (1994) Child developmental risk factors for schizophrenia in the British 1946 cohort. *Lancet*, **344**, 1398–1402.

Kaney, S. & Bentall, R. P. (1992) Persecutory delusions and the self-serving bias: evidence from a contingency judgement task. *Journal of Nervous and Mental Disease*, **180**, 773–780.

Kawachi, I., Kennedy, B. P., Lochner, K., *et al* (1997) Social capital, income inequality and mortality. *American Journal of Public Health*, **50**, 245–251.

Kennedy, B., Kawachi, I., Jones, C., *et al* (1997) Disrespect and black mortality. *Ethnicity and Disease*, **7**, 207–214.

Kiev, A. (1965) Psychiatric morbidity of West Indian immigrants in an urban group practice. *British Journal of Psychiatry*, **111**, 51–56.

Kinderman, P., Kaney, S., Morley, S., *et al* (1992) Paranoia and the defensive attributional style: deluded and depressed patients' attributions about their own attributions. *British Journal of Medical Psychology*, **65**, 371–383.

___ & Bentall, R. P. (1996) Self-discrepancies and persecutory delusions: evidence for a model of paranoid ideation. *Journal of Abnormal Psychology*, **105**, 106–113.

King, M., Coker, E., Leavey, G., *et al* (1994) Incidence of psychotic illness in London: comparison of ethnic minority groups. *British Medical Journal*, **309**, 1115–1119.

Kirov, G. & Murray, R. M. (1999) Ethnic differences in the presentation of bipolar affective disorder. *European Psychiatry*, **14**, 199–204.

Kleinman, A. (1980) *Patients and Healers in the Context of Culture*, pp. 138–145. Berkeley, CA: University of California Press.

Laviest, T. (1993) *Segregation, Poverty, Empowerment, Health Consequences for African-Americans*. New York: Milbank Memorial Fund 1.1.

Lawson, W. B., Yesavage, J. A. & Werner, P. D. (1984) Race, violence and psychopathology. *Journal of Clinical Psychiatry*, **45**, 294–297.

Leavy, G., King, M., Cole, E., *et al* (1997) First-onset psychotic illness: patients' and relatives' satisfaction with services. *British Journal of Psychiatry*, **170**, 53–57.

Leff, J., Fisher, M. & Bertelsen, A. (1976) A cross-national epidemiological study of mania. *British Journal of Psychiatry*, **129**, 428–442.

___ (1988) *Psychiatry Around the Globe. A Transcultural View*, 2nd edn. London: Gaskell.

Lewis, G., Croft-Jeffreys, C. & David, A. (1990) Are British psychiatrists racist? *British Journal of Psychiatry*, **157**, 410–415.

___, David, A., Andreasson, S., *et al* (1992) Schizophrenia and city life. *Lancet*, **340**, 137–140.

Lillie-Blanton, M. & Laviest, T. (1996) Race, ethnicity, the social environment and health. *Social Science and Medicine*, **43**, 83–91.

Littlewood, R. & Lipsedge, M. (1981) Some social and phenomenological characteristics of psychotic immigrants. *Psychological Medicine*, **11**, 289–302.

___ & ___ (1982) *Aliens and Alienists*. London: Penguin.

___ (1998) *The Butterfly and the Serpent: Essays in Psychiatry and Religion*. New York: Free Association Books.

Lloyd, K. & St Louis, L. (1992) Schizophrenia among Afro-Caribbeans. *British Journal of Psychiatry*, **160**, 712.

Lomas, J. (1998) Social capital and health: implications for public health and epidemiology. *Social Science and Medicine*, **47**, 1181–1188.

Maden, T. (1999) Forensic psychiatry. In *Ethnicity: An Agenda for Mental Health* (eds D. Bhugra & V. Bahl), pp. 151–157. London: Gaskell.

Magaziner, J. (1988) Living density and psychopathology: a re-examination of the negative model. *Psychological Medicine*, **18**, 419–431.

Mahy, G. E., Mallett, R., Leff, J., *et al* (1999) First-contact incidence-rate of schizophrenia on Barbados. *British Journal of Psychiatry*, **175**, 28–33.

Marcellis, M., MacIver, S. & Soomans, A. (1998) Area, class and health: should we be focusing on places or people? *Journal of Social Policy*, **22**, 213–234.

Maughan, B. (1989) Growing up in the inner city. *Paediatric and Perinatal Epidemiology*, **3**, 195–215.

McGovern, D. & Cope, R. (1987) First psychotic admission rates of first- and second-generation African–Caribbeans. *Social Psychiatry*, **22**, 139–149.

___ & ___ (1991) Second-generation African–Caribbeans and young whites with a first-admission diagnosis of schizophrenia. *Social Psychiatry and Psychiatric Epidemiology*, **26**, 95–99.

___ & Hemmings, P. (1994) A follow-up of second generation Afro-Caribbeans and white British with a first admission diagnosis of schizophrenia: attitudes to mental illness and psychiatric services of patients and relatives. *Social Science and Medicine*, **38**, 117–128.

___, ___, Cope, R., *et al* (1994) Long term follow-up of young Afro-Caribbean Britons and Britons with a first admission diagnosis of schizophrenia. *Social Psychiatry and Psychiatric Epidemiology*, **29**, 8–19.

McGrath, J. & Murray, R. M. (1995) Risk factors for schizophrenia: from conception to birth. In *Schizophrenia* (eds S. Hirsch & D. Weinberger), pp. 187–205. Oxford: Blackwell.

McGuire, P. K., Jones, P., Harvey, L., *et al* (1994) Cannabis and acute psychosis. *Schizophrenia Research*, **13**, 161–168.

___, ___, ___, *et al* (1995) Morbid risk of schizophrenia for relatives of patients with cannabis-associated psychosis. *Schizophrenia Research*, **15**, 277–281.

McKenzie, K. (1999) Moving the misdiagnosis debate forward. *International Review of Psychiatry*, **11**, 153–161.

___ & Murray, R. M. (1999) Risk factors for psychosis in the UK African–Caribbean population. In *Ethnicity: An Agenda for Mental Health* (eds D. Bhugra & V. Bahl), pp. 48–59. London: Gaskell.

___, van Os, J., Fahy, T. A., *et al* (1995) Psychosis with good prognosis in Afro-Caribbean people now living in the United Kingdom. *British Medical Journal*, **311**, 1325–1328.

Mednick, S. A., Machon, R. A., Huttenen, M. O., *et al* (1988) Adult schizophrenia following prenatal exposure to an influenza epidemic. *Archives of General Psychiatry*, **47**, 875–876.

Mercer, K. (1986) Racism and transcultural psychiatry. In *The Power of Psychiatry*, (eds P. Miller & N. Rose). Cambridge: Polity.

Mukherjee, S., Shukla, S., Woodle, J., *et al* (1983) Misdiagnosis of schizophrenia in bipolar patients: a multiethnic comparison. *American Journal of Psychiatry*, **140**, 1571–1572.

Murray, R. & Hutchinson, G. (1999) Psychosis in migrants: the striking example of African–Caribbeans resident in England. In *Causes of Schizophrenia* (eds I. Gattaz & H. Hafner). Darmstadt: Steinkopf.

Nazroo, J. (1997) *Ethnicity and Mental Health*. London: Policy Studies Institute.

___ (1998) Rethinking the relationship between ethnicity and mental health: the British Fourth National Survey of Ethnic Minorities. *Social Psychiatry and Psychiatric Epidemiology*, **33**, 145–148.

Ndetei, D. M. & Vadher, A. (1985) A comparative cross-cultural study of the frequencies of hallucination in schizophrenia. *Acta Psychiatrica Scandinavica*, **70**, 545–549.

Neighbors, H. W., Jackson, J. S., Broman, C., *et al* (1996) Racism and the mental health of African-Americans: the role of self and system blame. *Ethnicity and Disease*, **6**, 167–175.

Nettleford, R. M. (1972) *Identity, Race and Protest in Jamaica*. New York: William Morrow.

Nicoll, A. & Logan, S. (1989) Viral infections of pregnancy in childhood. In *Ethnic Factors in Health and Disease* (eds J. Cruikshank & D. Beevers), pp. 95–102. London: Wright.

O'Callaghan, E., Sham, P., Takei, N., *et al* (1991) Schizophrenia after exposure to 1957 A2 influenza epidemic. *Lancet*, **337**, 1248–1250.

Odegaard, O. (1932) Emigration and insanity: a study of mental disease among Norwegian-born population in Minnesota. *Acta Psychiatrica et Neurologica Scandinavica*, **7** (suppl. 4), 1–206.

Owens, D., Harrison, G. & Boot, D. (1991) Ethnic factors in voluntary and compulsory admissions. *Psychological Medicine*, **21**, 185–196.

Parker, S. & Kleiner, R. (1966) *Mental Illness in the Urban Negro Community*. New York: Free Press.

Parkman, S., Davies, S., Leese, M., *et al* (1997) Ethnic differences in satisfaction with mental health services among representative people with psychosis in south London: PRiSM Study 4. *British Journal of Psychiatry*, **171**, 260–264.

Parsons, C. (1963) West Indian children with multiple congenital defects. *Archives of Diseases in Childhood*, **38**, 454–458.

Patrick, D. L. & Wickizer, T. M. (1995) Community and health. In *Society and Health* (eds B. C. Amick, S. Levine, A. R. Tarlov & C. D. Walsh). New York: Oxford University Press.

Pipe, R., Bhat, A., Matthews, B., *et al* (1991) Section 136 and African/Afro-Caribbean minorities. *International Journal of Social Psychiatry*, **37**, 14–23.

Putnam, R. D. (1995) Bowling alone. America's declining social capital. *Journal of Democracy*, **6**, 65–78.

Rack, P. (1982) *Race, Culture and Mental Disorder*, pp. 101–112. London: Tavistock.

Rathwell, T. (1984) General practice, ethnicity and health service delivery. *Social Science and Medicine*, **19**, 123–130.

Robey, K. L., Cohen, B. D. & Gara, M. A. (1989) Self-structure in schizophrenia. *Journal of Abnormal Psychology*, **98**, 436–442.

Rogers, A. & Faulkner, A. (1987) *A Place of Safety*. London: Mind.

Rwegellera, G. G. C. (1980) Differential use of psychiatric services by West Indians, West Africans and English in London. *British Journal of Psychiatry*, **137**, 428–432.

Sashidharan, S. P. (1993) Afro-Caribbeans and schizophrenia: the ethnic vulnerability hypothesis re-examined. *International Review of Psychiatry*, **5**, 129–144.

https://doi.org/10.1192/bjp.178.40.s60 Published online by Cambridge University Press

Schneider, K. (1959) *Clinical Psychopathology*. New York: Grune & Stratton.

Selten, J. P. & Sijben, N. (1994) First admission rates for schizophrenia in immigrants to the Netherlands. The Dutch National Register. *Social Psychiatry and Psychiatric Epidemiology*, **29**, 71–77.

___, Slaets, J. P. J. & Kahn, R. S. (1997) Schizophrenia in Surinamese and Dutch Antillean immigrants to The Netherlands: evidence of an increased incidence. *Psychological Medicine*, **27**, 807–811.

Sharpley, M. S. & Peters, E. (1999) Ethnicity, class and schizotypy. *Social Psychiatry and Psychiatric Epidemiology*, **34**, 507–512.

Shaw, C. M., Creed, F., Tomenson, B., *et al* (1999) Prevalence of anxiety and depressive illness and help seeking behaviour in African Caribbeans and white Europeans: two phase general population survey. *British Medical Journal*, **318**, 302–306.

Sugarman, P. A. (1992) Outcome of schizophrenia in the Afro-Caribbean community. *Social Psychiatry and Psychiatric Epidemiology*, **27**, 102–105.

___ & Craufurd, D. (1994) Schizophrenia in the Afro-Caribbean community. *British Journal of Psychiatry*, **164**, 474–480.

Takei, N., O'Callaghan, E. & Sham, P. (1992) Winter birth excess in schizophrenia: its relationship to place of birth. *Schizophrenia Research*, **6** (special issue), 102.

___, Persaud, R., Woodruff, P., *et al* (1998) First episodes of psychosis in Afro-Caribbean and White people. An 18-year follow-up population-based study. *British Journal of Psychiatry*, **172**, 147–153.

Thakker, J. & Ward, T. (1998) Culture and classification: the cross-cultural application of DSM–IV. *Clinical Psychology Review*, **18**, 501–529.

Taylor, J., Henderson, D. & Jackson, B. B. (1991) A holistic model for understanding and predicting depressive symptoms in African-American women. *Journal of Community Psychology*, **19**, 306–320.

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Thomas, C. S., Stone, K., Osborn, M., *et al* (1993) Psychiatric morbidity and compulsory admission among UK-born Europeans, Afro-Caribbeans and Asians in central Manchester. *British Journal of Psychiatry*, **163**, 91–99.

Thornicroft, G. (1990) Cannabis and psychosis. Is there epidemiological evidence for association? *British Journal of Psychiatry*, **157**, 25–33.

Torrey, E. F. & Bowler, A. (1991) Geographical distribution of insanity in America: evidence for an urban factor. *Schizophrenia Bulletin*, **16**, 591–604.

Treffert, D. (1978) Marijuana use in schizophrenia: a clear hazard. *American Journal of Psychiatry*, **135**, 1213–1215.

Turner, W. M. & Tsuang, M. T. (1990) Impact of substance abuse on the course of schizophrenia. *Schizophrenia Bulletin*, **16**, 87–95.

Tyrer, S. P. (1982) Mania: diagnosis and treatment. *British Journal of Hospital Medicine*, **28**, 67–73.

van Os, J., Castle, D. J., Takei, N., *et al* (1996*a*) Psychotic illness in ethnic minorities: clarification from the 1991 Census. *Psychological Medicine*, **26**, 203–208.

___, Takei, N., Castle, D. J., *et al* (1996*b*) The incidence of mania: time trends in relation to gender and ethnicity. *Social Psychiatry and Psychiatric Epidemiology*, **31**, 129–136.

Wallace, R., Thompson Fullilove, M. & Fisher, A. J. (1996) AIDS, violence and behavioral coding: information theory, risk behavior and dynamic process on core-group sociogeographic networks. *Social Science and Medicine*, **43**, 339–352.

Wessely, S., Castle, D., Der, G., *et al* (1991) Schizophrenia and Afro-Caribbeans. A case–control study. *British Journal of Psychiatry*, **159**, 795–801.

Westermeyer, J., Vang, T. F. & Neider, J. (1983) Migration and mental health among refugees. *Journal of Nervous and Mental Disease*, **171**, 92–96.

Williams, D. (1996) Racism and health: a research agenda. *Ethnicity and Disease*, **6**, 1–6.

Williams-Morris, R. S. (1996) Racism and children's health: issues in development. *Ethnicity and Disease*, **6**, 69–81.

Wing, J. K. (1979) Mentally retarded children in Camberwell, London. In *Estimating Needs for Mental Health Care* (ed. H. Hafner), pp. 77–91. New York: Springer.

___ (1989) The concept of negative symptoms. *British Journal of Psychiatry*, **155** (suppl. 7), 10–14.

Zigler, E. & Glick, M. (1988) Is paranoid schizophrenia really camouflaged depression? *American Psychologist*, **43**, 284–290.

https://doi.org/10.1192/bjp.178.40.s60 Published online by Cambridge University Press