

Schizophrenia in Afro-Caribbean immigrants

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SUMMARY

Hospital admission rates for schizophrenia are higher in Afro-Caribbean immigrants to Britain than in the white British-born population. However, the reported differences in incidence and prevalence could be due to confounding variables: the diagnosis of schizophrenia might not carry the same prognostic implications in the two groups; and the differences in formal admission rates might not persist when demographic and diagnostic differences are allowed for.

The case-notes of 50 Afro-Caribbean immigrants and 41 British-born white patients with a hospital diagnosis of schizophrenia were examined retrospectively, the average period covered being 12 years. There were no differences in the number of readmissions, but in the Afro-Caribbean group readmissions were shorter. Involuntary admissions were twice as common in Afro-Caribbeans and this excess was not explained by differences in age, sex, or type of illness.

The reported excess of schizophrenia in Afro-Caribbean immigrants to Britain is real, but the illness seems to run a milder course than in the white British-born population.

INTRODUCTION

Much of the recent work on schizophrenia in Afro-Caribbeans (ACs) who migrated to Britain in the 1950s, 1960s and 1970s has concentrated on incidence and prevalence and accuracy of diagnosis: less attention has been given to long-term course and outcome. High rates of schizophrenia have been found among these immigrants in several studies. Part of the reason may be the misdiagnosis of schizophrenia in patients with stress-induced acute psychotic reactions, which have a good prognosis¹. However, research in Nottingham² and London³ suggests that schizophrenia in ACs is not more acute in its presentation than that of the white British population (WB).

It is possible that ethnic differences in the use of health services could account for the excess in hospital admission rates for schizophrenia among ACs. A delay in receiving appropriate help might lead to presentation later in the course of the illness when recourse to hospital admission, particularly under a section of the Mental Health Act, would be more likely.

A disproportionate number of black patients are admitted under a section of the Mental Health Act, with two⁴ to eightfold⁵ differences being reported. Confounding sociodemographic and clinical variables might lead to

spuriously high rates: controlling for age, sex⁶ and diagnosis⁷ erodes some of the excess.

This study addresses two questions: does the diagnosis of schizophrenia in AC carry the same implications in terms of outcome as it does in the WB?; and do the rates of formal admission among AC remain high when differences in age, sex, and diagnosis are accounted for?

METHODS

All patients born in the West Indies consecutively admitted between 1975 and 1982 with a hospital diagnosis of schizophrenia were included in the study. The control group consisted of WB patients admitted with a hospital diagnosis of schizophrenia, matched with the AC group for year of index admission, sex, and age (within 5 years). Those excluded were: the small number of British-born AC patients; patients aged above 45; and those patients in whom the duration of illness up to the index admission exceeded 5 years. Non-AC West Indians and British-born non-whites were eliminated by scrutiny of the case notes.

The patients had been admitted to an 800-bedded mental hospital serving a catchment area of one county and two middle London and two outer London boroughs. British-born male full-time employment ranged from 51% to 71% in these boroughs: 0.5% to 3% of the populations during the period of admission were Caribbean born⁸.

Date of birth, sex, and family history of mental illness (in first- and second-degree relatives) were recorded from the

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hospital notes of the index admission. Social class was derived from the patient's 'best ever' occupation according to the Registrar General's classification.

Number of admissions between the index admission and January 1990 were recorded (inclusive of the index admission). Length of hospital admission, duration of illness before admission, referring agent, Mental Health Act status, subsequent case note diagnosis, marital status ('marriage' was taken to include stable common-law partnerships), accommodation, co-residents, employment status, and symptoms grouped into Present State Examination syndromes⁹ were obtained for each admission from the case notes. Date of last contact with psychiatric services was noted.

Amount of medication was calculated by dividing the total amount of medication given during the first admission by the length of stay in days and conversion into chlorpromazine equivalents¹⁰. Discharge medication (dose and whether oral and/or depot) was recorded.

To clarify if differences in outcome could be attributed to the misdiagnosis of AC patients, Research and Diagnostic Criteria¹¹ were applied to case note data. In cases that did not meet criteria for definite or probable schizophrenia on either index or subsequent admissions DSMIIIR¹² criteria were applied to the index admission data.

Statistical analysis was carried out with the aid of the computer program Confidence Interval Analysis¹³. Binary data were analysed with the χ^2 -test and parametric continuous data with the *t*-test; durations of readmission data were normalized by transformation. Medication data, being non-parametric, were analysed by the Wilcoxon method. All χ^2 -tests are for 1 degree of freedom. The significance level is set at 0.05.

RESULTS

Fifty AC patients and 94 WB patients were admitted consecutively between 1975 and 1982 with a hospital diagnosis of schizophrenia. The 24 AC men were matched with 24 of the 63 WB men. Because of the smaller proportion of WB women, the 26 AC women could be matched with only 17 of the 31 WB women.

The AC women had a mean age of 32.6 (SD 6.05), the WB women 30.6 (7.22); the AC men 26.6 (6.64) and the WB men 26.7 (6.03). Thirty-nine per cent of AC patients were in social classes I, II, and III non-manual compared with 48% of the WB sample. There were insufficient data to assign social class in four AC patients and one WB patient.

Information on family history of mental illness data was missing in 21 (42%) of the AC case records compared with 11 (27%) of the WB sample. Of the remainder, 10 (34%) AC patients and 20 (67%) WB patients had a history of mental illness in first- and second-degree relatives ($\chi^2=6.11$,

$0.025 > P > 0.01$). One AC patient and three WB patients had a family history of schizophrenia.

Diagnosis and symptoms

Twenty-six (52%) AC and 21 (51%) WB patients met Research and Diagnostic Criteria (RDC) for schizophrenia (definite and probable). Of those not meeting RDC for schizophrenia, 10 (20%) AC and 7 (17%) WB patients met operational criteria for atypical psychosis and 8 (16%) and 10 (24%) for depressive disorder not otherwise specified. Forty-three per cent of AC patients and 24% of WB patients had their diagnosis changed (not a significant difference).

There was a tendency for WB patients to have higher rates of negative symptoms, but the difference only reached statistical significance for loss of interest and concentration (Present State Examination syndrome IC) among males. Other Present State Examination syndromes occur with similar frequencies in the two ethnic groups.

Outcome

The mean number of years between index admission and last date of contact with psychiatric services was 11.9 years for AC women (SD 2.07), 12.1 (2.23) for WB women, 11.7 (1.9) for AC men, and 11.7 (2.02) for WB men. One WB man committed suicide; one AC man was killed unlawfully in police custody.

The mean number of readmissions was 3.0 (95% CI 1.9 to 4.1) for AC and 3.12 (1.84 to 4.41) for WB patients; there were no sex differences. Twenty AC and eight WB patients had one admission only ($\chi^2=4.44$, $0.05 > P > 0.025$).

The mean duration of readmissions was 7.3 weeks for AC patients and 14.4 for WB patients (logarithmic

Table 1 Mode of referral according to ethnic group

Referrer	Index admission		Subsequent admissions					
	AC (N=50)	WB (N=41)	AC (N=150)	WB (N=128)				
	n	(%)	n	(%)	n	(%)	n	(%)
General practitioner	29	(58)	24	(59)	49	(33)	56	(44)
General hospital	6	(12)	5	(12)	19	(13)	13	(10)
Out patients	2	(4)	3	(7)	7	(5)	8	(6)
Self	1	(2)	2	(5)	22	(15)	17	(13)
Police	8	(16)	5	(12)	41	(28)	19	(15)
Social worker	2	(4)	2	(5)	9	(6)	7	(6)
CPN	0	(0)	0	(0)	1	(1)	4	(3)
Other	0	(0)	0	(0)	3	(2)	4	(5)
Not recorded	2		0		1		1	

AC=Afro-Caribbean; WB=White British-born; CPN=community psychiatric nurse

transformation: difference between sample means 0.335, 95% CI 0.034 to 0.636, $0.05 > P > 0.01$). The mean duration of readmissions for AC women was 5.65, for WB women 17.5 (logarithmic transformation: difference between means 0.426, 95% CI 0.007 to 0.845, $0.05 > P > 0.01$); for AC males it was 9.04 (5.16 to 12.9) and for WB men 12.4 [(4.66 to 20.1) (not significant)].

Mode of admission

There were no significant differences in reported onset for the index admission between the two groups, with 29% of AC and 26% of WB patients having symptoms lasting less than 1 week before admission, and 37% and 35% greater than 3 months: onset data for index admission were not recorded in the case of 12 AC patients and seven WB patients. For subsequent admissions, 63% of AC patients had a mode of duration of illness before admission of less than 1 week compared with 30% of WB patients ($\chi^2=6.22$, $0.025 > P > 0.001$); data were incomplete for three AC patients and three WB patients.

An excess of police referrals was found in the AC group largely at the expense of general practitioner (GP) referrals (Table 1).

Both male and female AC patients had higher rates of formal admissions than WB patients (Table 2). Ten AC female patients had one or more Section 136 admissions compared with only one of the WB female patients ($\chi^2=5.73$, $0.025 > P > 0.01$). [Section 136 gives authority to a police officer to take a mentally disordered person found in a public place to a place of safety.]

Medication

Twenty-three AC patients (46%) and 18 (44%) WB patients were discharged on intramuscular depot medication; there were no significant ethnic differences in the doses of discharge medication, depot or oral. WB men received the highest doses of in-patient medication: a median of 717 mg chlorpromazine equivalent per day compared with 448 mg for the AC men (95% CI for difference between the medians: -504 to -19.0, $0.05 > P > 0.01$). Two AC and two WB women and two AC men and one WB man, had to be excluded from calculations of in-patient medication because of missing data and one WB woman and one UK male from calculations of discharge medication.

DISCUSSION

Outcome

There were no ethnic differences in the mean number of readmissions. The two groups had remarkably similar diagnostic profiles when standardized criteria were applied to the case-note data. Apparently the reported rates of

Table 2 Mental Health Act (MHA) status on admission according to sex and ethnic group

MHA status	Female		Male		Female		Male	
	AC (N=103)		WB (N=69)		AC (N=97)		WB (N=100)	
	n	%	n	%	n	%	n	%
Section 136	18	17	1	1	16	16	9	9
Other MHA	38	37	9	13	35	36	26	26
Informal	47	46	58	84	46	47	64	65
Not recorded	0		1		0		1	

schizophrenia represent a 'real' increase—i.e., one that is not attributable to the misdiagnosis of atypical psychotic reactions among AC immigrants. Nevertheless, a more acute onset and shorter length of readmission suggest that the illness is more benign in AC.

In a retrospective case note study there is a danger that ethnic differences in residential mobility will distort longitudinal indexes. However, the two groups stayed in contact with the psychiatric services for a similar length of time. Data collected from the case-notes may be of doubtful reliability. The onset and family-history results need to be approached with caution because of the prevalence of missing data in these categories. Social and psychological functioning outside hospital was not assessed: use of other services can only be inferred indirectly from the referral data. A prospective follow-up study of psychotic patients showed that ACs spent more time in a recovered state, despite having the same number of admissions¹⁴. However, direct comparison with this and other outcome studies^{15,16} may not be appropriate because of the shorter follow-up (4 years) and the different socio-cultural characteristics of the AC group.

Ethnicity and compulsory admission

Unlike the work of Bebbington *et al.*¹⁷, the present study confirmed Moodley and Perkins¹⁸ finding that the increased rates of detention among ACs remain when sex, age and diagnosis are controlled for. In particular, Section 136 admissions were 17 times more common in AC women than their white counterparts; the explanation was not that a small sub-group of Afro-Caribbeans generated most of the Section 136 admissions. Overall, twice as many involuntary admissions occurred among the AC patients.

This over-representation of AC admitted under the Mental Health Act could be due to differences in interaction with the services at several points along the pathway of entry into care. Several groups have reported an apparent under-utilization of primary health care by AC, as reflected by the lower rates of GP referral^{19,20}. The present study did not

detect differences in rates of GP referrals for the index admission, but for subsequent admissions a lower proportion of Afro-Caribbean patients were referred by their GP. Differences in use of specialist services and presentation of the illness and bias in professional agencies' perception of black patients may also be influential. Although the tragic outcome of the AC patient killed unlawfully in police custody cannot be ignored, the increase in Section 136 detention orders among blacks is not likely to be a consequence of overt racism on the part of the police. It is often family members of the black mentally ill who initiate sectioning procedures and contact the police in the first place²¹.

These findings remain speculative until further, preferably prospective, research can be carried out. More detailed investigation is needed into how different ethnic groups interact with the professional services. AC immigrants are themselves a heterogeneous group^{22,23}.

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REFERENCES

- 1 Littlewood R, Lipsedge M. *Aliens and Alienists*, Revised edn. London: Routledge, 1989
- 2 Harrison G, Owens D, Holton A, Neilson D, Boot D. A prospective study of severe mental disorder in Afro-Caribbean patients. *Psychol Med* 1988;18:643-57
- 3 King M, Coker E, Leavey G, Hoare A, Johnson-Sabine E. Incidence of psychotic illness in London: comparison of ethnic groups. *BMJ* 1994;309:1115-19
- 4 Ineichen B, Harrison G, Morgan HG. Psychiatric hospital admissions in Bristol. I. Geographical and ethnic factors. *Br J Psychiat* 1984;145:600-4
- 5 McGovern D, Cope RV. First psychiatric admission rates of first and second generation Afro-Caribbeans. *Soc Psychiat Psychiatr Epidemiol* 1987;22:139-49
- 6 Harrison G, Ineichen B, Smith J, Morgan HG. Psychiatric hospital admissions in Bristol. II. Social and clinical aspects of compulsory admission. *Br J Psychiat* 1984;145:605-11
- 7 Cope R. The compulsory detention of Afro-Caribbeans under the Mental Health Act. *New Commun* 1989;15:343-56
- 8 Office of Population Censuses and Surveys. *Census 1981*. London: HMSO, 1981
- 9 Wing JK, Cooper JE, Sartorius N. *Measurement and Classification of Psychiatric Symptoms*. Cambridge: Cambridge University Press, 1974
- 10 Wyatt RD. Biochemistry and Schizophrenia (Part IV). The neuroleptics their mechanism of action: a review of the biochemical literature. *Psychopharmacol Bull* 1976;12:5-50
- 11 Spitzer R, Endicott J, Robins E. *Research and Diagnostic Criteria (RDC) for a Selected Group of Functional Disorders*, 3rd edn. New York: Biometric Research Division, New York State Psychiatric Institute, 1977
- 12 American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders*, 3rd edn, revised. Washington DC: American Psychiatric Association, 1987
- 13 Gardner MJ, Gardner SB, Winter PD. *Confidence Interval Analysis*. London: BMJ, 1989
- 14 McKenzie K, van Os J, Fahy T, Jones P, Harvey I, Toone B, Murray B. Psychosis with good prognosis in Afro-Caribbeans now living in the United Kingdom. *BMJ* 1995;311:1325-8
- 15 Sugarman PA. Outcome of schizophrenia in the Afro-Caribbean community. *Soc Psychiat Psychiatr Epidemiol* 1992;27:102-5
- 16 McGovern D, Hemmings P, Cope R, Lowerson A. Long-term follow-up of young Afro-Caribbean Britons and white Britons with a first admission diagnosis of schizophrenia. *Soc Psychiat Psychiatr Epidemiol* 1994;29:8-19
- 17 Bebbington PE, Feeney ST, Flannigan CB, Glover GR, Lewis SW, Wing JK. Inner London collaborative audit of admissions in two health districts. II. Ethnicity and the use of the Mental Health Act. *Br J Psychiat* 1994;165:743-9
- 18 Moodley P, Perkins R. Routes to psychiatric inpatient care in an Inner London borough. *Soc Psychiat Psychiatr Epidemiol* 1991;26:47-51
- 19 Hitch PJ, Clegg P. Modes of referral of overseas immigrant and native-born first admissions to psychiatric hospital. *Soc Sci Med* 1980;14:369-74
- 20 Harrison G, Holten A, Neilson D, Owens D, Boot D, Cooper J. Severe mental disorder in Afro-Caribbean patients: some social, demographic and service factors. *Psychol Med* 1989;19:683-96
- 21 Owens D, Harrison G, Boot D. Ethnic factors in voluntary and compulsory admissions. *Psychol Med* 1991;21:185-96
- 22 Glover GR. Differences in psychiatric admission patterns between Caribbeans from different islands. *Soc Psychiat Psychiatr Epidemiol* 1989;24:209-11
- 23 Callan A. Importance of stratification by age. *Br J Psychiat* 1993;163:551

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