

## Ethnic differences in prisoners

### I: Criminality and psychiatric morbidity<sup>†</sup>

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**Background** In England and Wales, persons of African–Caribbean origin are more likely to be both imprisoned and admitted to secure hospitals.

**Aims** To estimate population-based rates of imprisonment in different ethnic groups, and compare criminal behaviour and psychiatric morbidity.

**Method** We examined Home Office data on all persons in prison, and carried out a two-stage cross-sectional survey of 3142 remanded and sentenced, male and female, prisoners in all penal establishments in England and Wales in 1997.

**Results** We confirmed high rates of imprisonment for Black people and lower rates for South Asians. Different patterns of offending and lower prevalence of psychiatric morbidity were observed in Black prisoners.

**Conclusions** Despite increased risks of imprisonment, African–Caribbeans show less psychiatric morbidity than White prisoners. This contrasts with the excess of African–Caribbeans in secure hospitals, an inconsistency possibly in part due to the effects of ethnic groups on admission procedures.

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Mentally disordered Black males in England and Wales are 6 times as likely to be detained in secure forensic psychiatry services as White men, following criminal and highly difficult and dangerous behaviour (Coid *et al*, 2000). Black people in the UK were 4 times more likely to be arrested than White or other ethnic groups during 1999/2000 (Home Office, 2000). An earlier study demonstrated that Black adult males were imprisoned at 7 times the age-adjusted rate of White males in 1991, with higher rates of imprisonment for rape, robbery and drug offences (Home Office, 1992). Smith (1997) concluded from his review that ‘differences in rates of arrest and imprisonment largely arise from differences in rates of offending in different ethnic groups’. It is uncertain, however, whether the overrepresentation of African–Caribbeans in secure psychiatric services and in prisons is related, since the contribution of ethnic minorities to the overall high levels of psychiatric morbidity found among prisoners remains unclear. If racial bias operates at the stage of imprisonment, it would be expected that more Black persons would be remanded or serving sentences for less serious offences, and that more would have a mental disorder, following exclusion from mental health services. We compared standardised admission ratios between ethnic groups, and then compared the criminal histories and prevalences of psychiatric morbidity between different ethnic groups.

## METHOD

The data presented in this paper came from two sources. The first was Home Office data on all persons imprisoned in England and Wales during 1997, according to ethnic group and UK nationality, the second a survey of psychiatric morbidity among prisoners in the same year.

## Survey of psychiatric disorders among prisoners

The survey design has been described in a previous report (Singleton *et al*, 1998). All prisons in England and Wales were included in the survey, and samples of inmates were taken from all locations within each prison. It was intended to provide separate prevalence estimates for different types of prisoner – remand and sentenced, male and female. To ensure that persons in all prisons had an equal chance of being selected, a fixed sampling fraction was obtained, proportional to numbers in each prison.

Sampling was based on 61 944 prisoners in 131 penal establishments at the end of July 1997 (all ages), including 46 872 male sentenced prisoners, 12 302 male remand prisoners (including civil prisoners) and 2770 women prisoners. To obtain the required number of interviews for each type of prisoner, different sampling fractions were obtained for each group, that is 1 in 34 male sentenced prisoners, 1 in 8 male remand prisoners, and 1 in 3 women prisoners (whether remand or sentenced). The sampling fraction for the male sentenced prisoner group was changed to 1 in 50 for the last 4 weeks of the survey because a larger number of male sentenced prisoners than expected was obtained in the early part of the fieldwork. To ensure that the correct number of interviews was obtained, replacement of those leaving (for example transfers or releases) with new arrivals was carried out for remand but not sentenced prisoners.

The survey was carried out in two stages: the first involved initial interviews by lay interviewers who asked questions and entered the prisoners’ responses using laptop computers. Parts were self-administered by prisoners using computers, unless unable to read or unlikely to do this reliably. The second stage included every fifth person interviewed in the first, and comprised a follow-up interview by a clinician.

## Response

All 131 prison establishments agreed to participate, 3563 prisoners were selected, and 3142 (88%) were interviewed in the first phase. A further 37 agreed to take part but failed to complete the interview. Only 198 (6%) refused, 53 (1%) were unable to participate (mainly because of language difficulties), and the interviewers could not contact 118 (3%) prisoners.

<sup>†</sup>See part 2, pp. 481–487, this issue.

Interviewers were advised not to see 15 prisoners. Response was good in all prisons, and below 80% in only 12.

In the second phase, 505 (76%) of 661 prisoners selected for follow-up were interviewed: 105 (16%) could not be contacted as most had left prison. A further 50 (8%) refused. The mean interval between the first and second phase interviews was 2 weeks.

**Assessment instruments (stage 1)**

Lay interviewers administered questionnaires using laptop computers and establishing sociodemography, general health, use of services in prison, service use before current prison term, and lifetime experience of services. The distribution of neurotic disorders and symptoms was established using the Clinical Interview Scale – Revised (CIS-R; Lewis *et al*, 1992). The Psychosis Screening Questionnaire (PSQ; Bebbington & Nayani, 1995) identified probable psychosis. Lay interviews also elicited histories of deliberate self-harm, key life events and post-traumatic stress, difficulties with daily living, alcohol consumption, drug use, and carried out the Quick test (Ammons & Ammons, 1962). Information on criminal charges or convictions was obtained from each prison. A previous history of convictions was obtained from self-report. Subjects were also administered the Structured Clinical Interview – Revised (SCID-II) questionnaire for DSM-IV Personality Disorders (First *et al*, 1997).

**Assessment instruments (stage 2)**

The 1 in 5 subsample was interviewed by clinicians using the Schedules for Clinical

Assessment in Neuropsychiatry (SCAN; World Health Organization, 1992a) and the SCID-II. SCAN is a detailed semi-structured clinical interview that applies algorithms to the elicited symptoms to establish diagnoses according to DSM-IV (American Psychiatric Association, 1994) and ICD-10 (World Health Organization, 1992b) criteria. SCID-II was chosen because it covers each personality disorder category in turn and, within each category, each component criterion is evaluated by specified questions and subsequent probes. The SCID-II can usually be completed in under 60 minutes, an important consideration for a survey covering many disorders and several other topics.

**Ethnicity**

The subjects assigned themselves to 1 of 9 ethnic groups (Government Statistical Service, 1996). For the study analysis, this classification was simplified into 4 categories: White, Black (including Black Caribbean, Black African, Black other), South Asian (including Indian, Pakistani, Bangladeshi), or Other (all other categories). Data were also available on whether the subject was non-UK born.

**Statistical analysis**

Data analysis was performed using SAS statistical software (SAS Institute Inc., Cary, North Carolina, USA). Data were obtained from the Home Office for all prisoners in penal establishments in England and Wales for the year 1997 according to age, gender and ethnic grouping, and UK nationality. National imprisonment rates according to

age and gender were calculated. These were taken as the expected imprisonment rates for the population as a whole. They were then applied to the age and gender structures of each ethnic population group to calculate the numbers of imprisonments in each ethnic group that would have been expected if the national rates had applied. The comparison of actual with expected imprisonments was then used to calculate a standardised imprisonment ratio for each of the ethnic groups according to gender.

Logistic regression was used to model the prevalence of different outcomes of interest among prisoners according to gender using the survey data. The independent variables included marital status, age, whether UK-born, qualifications, social class and prisoner type. Odds ratios (OR) with 95% confidence intervals (CI) were used to measure relative differences between the Black and South Asian ethnic groups compared with the White ethnic group, adjusting for the above independent variables.

**RESULTS**

**Standardised imprisonment ratios, 1997**

Mid-year figures for 1997 (June) showed that there were 58 752 men and 2772 women aged 16–64 years in prison in England and Wales, both remanded and sentenced. However, 4447 men and 407 women were foreign nationals. Table 1 demonstrates the age-standardised imprisonment ratios for males and females according to ethnic group and adjusted for

**Table 1** Observed and expected offenders imprisoned in England and Wales during 1997 (based on age-specific rates with standardised admission ratios)

Ethnic group	Male				Female			
	Observed	Expected	SIR	(95% CI)	Observed	Expected	SIR	(95% CI)
<b>All prisoners</b>								
White	48 518	54 090	90	(89–91)	2108	2544	83	(79–87)
Black	6979	1477	473	(461–484)	524	78	672	(616–732)
South Asian	1728	2264	76	(73–80)	26	105	25	(16–36)
Other	1527	919	166	(158–175)	114	44	258	(214–311)
<b>British nationality</b>								
White	46 607	50 926	91.5	(90.7–92.4)	1997	2220	90	(86–94)
Black	5680	1052	540	(526–554)	304	51	597	(532–668)
South Asian	1215	1808	67	(63.5–71.1)	14	72	19.4	(10.6–32.5)
Other	803	520	154	(144–165)	50	22	231	(172–305)

SIR, standardised imprisonment ratio.

British nationality. Following adjustment, imprisonment remained considerably higher for Black men than for White men. It was somewhat lower for South Asian men, but increased for a mixed subgroup of other ethnic categories. Similarly, the imprisonment ratio was higher for Black women than for White women. Again it was considerably lower for South Asian women and higher for a mixed group of other ethnic categories. Approximately 6 times as many Black men and women were in prison in 1997 compared with White counterparts.

### Survey sample

A total of 3142 prisoners were interviewed in the first phase of the survey, 2371 (75%) men and 771 (25%) women. The subjects were 80% White, 13% Black (8% Black Caribbean; 4% Black African; 1% Black other), 3% South Asian, and 4% Other. Among the interviewed prisoners 39 (1%) were foreign nationals.

Table 2 indicates marked demographic differences between Black and South Asian prisoners and White prisoners. Compared with White prisoners, those in the Black ethnic subgroup were more likely to be female, single and non-UK born, but less likely to have been unemployed or living off the proceeds of crime before imprisonment. They were also more likely to have educational qualifications. There were no differences in social class, prisoner type, age or whether they had children. Compared with Whites, South Asian prisoners were less likely to be female, unemployed, living off crime before

imprisonment or to have children. They were more likely to be non-UK born and of higher social class. There were no differences in marital status, educational qualifications, prisoner type or age.

### Logistic regression – criminal histories

Table 3 compares index offences (i.e. charges leading to remand or convictions) of the Black and South Asian ethnic groups with those of the White group, according to gender, after adjusting for age, UK birth, prisoner type, social class, marital status and qualifications. Black male prisoners were more likely to be charged with or convicted of robbery and firearm offences; burglary and theft were less likely. There were no differences for homicide offences, major violence (e.g. wounding), minor violence (e.g. common assault, affray), major sex offences (rape and indecent assault), other sex offences, false imprisonment, fraud and forgery, criminal damage, drug offences, breach of suspended sentences or probation, etc. Black women were also less likely to be charged with or convicted of theft; drug offences were more likely. South Asian women showed no differences in any crime categories; South Asian men showed no differences except for fewer burglaries and thefts. Numbers were too small to examine other offences.

Independent comparisons of patterns of previous criminality and imprisonment between Black and South Asian ethnic groups and Whites are shown in Table 4. Black male prisoners were less likely to have previous convictions, specifically for

violence, arson, burglary, fraud and deception, or to have previously escaped from custody. Black women were also less likely to have previous convictions, specifically those of burglary, drug offences, fraud/deception, or to have escaped from custody. South Asian prisoners appeared similar to White prisoners in most categories of previous criminality, although fewer South Asian men had been convicted of violence or burglary, or had escaped from custody. Stratified according to gender, there were no differences between ethnic groups when comparing previous experiences of imprisonment.

### Severe mental disorder, hazardous drinking and deliberate self-harm

Univariate analyses of severe mental disorder (schizophrenia, delusional disorder, affective psychosis or other functional psychosis) were carried out using diagnostic data from SCAN. No significant differences were found between the Black and White subgroups, whether for both genders combined or for males and females separately. Owing to the small numbers, these comparisons could only be carried out for South Asians and Whites by combining both genders. No differences were found.

Table 5 compares Black and South Asian ethnic subgroups separately with the White subgroup in terms of probable psychosis (based on the PSQ), hazardous drinking and deliberate self-harm derived from self-report instruments. Black men and women were less likely to be rated as having probable psychosis, and Black

**Table 2** Prison survey of psychiatric morbidity: comparison of Black and South Asian ethnic groups with White ethnic group for demography and prisoner type

	White (n=2515)		Black (n=424)				South Asian (n=86)						
	n	(%)	n	(%)	OR	(95% CI)	P	n	(%)	OR	(95% CI)	P	
Female	583	(23)	138	(33)	1.60	(1.28–2.00)	<0.001	11	(13)	0.49	(0.26–0.92)	0.024	
Single	905	(36)	183	(43)	1.35	(1.10–1.66)	0.005	36	(42)	1.28	(0.83–1.98)	0.265	
Non-UK born	97	(4)	165	(39)	11.1	(8.60–11.5)	<0.001	37	(43)	13.2	(8.33–20.9)	<0.001	
Professional social class	218	(9)	48	(11)	1.35	(0.99–1.87)	0.080	15	(17)	2.23	(1.25–3.95)	0.005	
Unemployed	1634	(65)	232	(55)	0.65	(0.53–0.80)	<0.001	38	(44)	0.43	(0.28–0.66)	<0.001	
Lived off crime	645	(26)	53	(13)	0.41	(0.31–0.56)	<0.001	11	(13)	0.43	(0.22–0.81)	0.007	
Educational qualifications	1324	(53)	250	(60)	1.32	(1.07–1.63)	0.009	52	(61)	1.37	(0.89–2.13)	0.155	
Children	1354	(54)	246	(58)	0.85	(0.69–1.04)	0.112	33	(38)	0.53	(0.34–0.83)	0.005	
Remanded prisoner	1142	(45)	193	(46)	1.00	(0.82–1.24)	0.966	44	(51)	1.26	(0.82–1.94)	0.292	
Age, years (mean (s.d.))	29.1	(9.46)	28.7	(8.87)			t=0.79	NS	29.0	(10.97)		t=0.93	NS

**Table 3** Prison survey: odds ratios (95% CI) for effect of index offences in Black and South Asian prisoners compared with White prisoners

Offence	Black				South Asian			
	Unadjusted	P	Adjusted <sup>1</sup>	P	Unadjusted	P	Adjusted <sup>1</sup>	P
<b>Men</b>								
Homicide	0.94 (0.53–1.67)	0.8409	1.22 (0.64–2.30)	0.544	0.50 (0.12–2.07)	0.341	0.73 (0.16–3.24)	0.677
Major violence	0.96 (0.63–1.45)	0.8317	1.07 (0.68–1.66)	0.779	0.24 (0.06–0.99)	0.049	0.30 (0.07–1.27)	0.103
Minor violence	0.97 (0.69–1.37)	0.8616	1.06 (0.74–1.53)	0.752	0.46 (0.20–1.08)	0.074	0.56 (0.23–1.32)	0.186
Major sex offence	0.99 (0.61–1.60)	0.9519	1.26 (0.73–2.19)	0.404	1.35 (0.61–2.99)	0.462	1.59 (0.65–3.87)	0.308
Other sex offence	0.90 (0.20–3.96)	0.8891	0.79 (0.12–5.07)	0.807	–	–	–	–
Arson	–	–	–	–	0.75 (0.10–5.59)	0.783	1.54 (0.20–11.9)	0.681
Robbery	2.41 (1.78–3.27)	0.0001	2.68 (1.91–3.76)	<0.001	0.54 (0.22–1.36)	0.191	0.67 (0.26–1.72)	0.406
Firearm	2.06 (1.12–3.80)	0.0199	2.92 (1.53–5.59)	0.001	1.10 (0.26–4.61)	0.898	1.76 (0.40–7.82)	0.455
Burglary	0.56 (0.39–0.79)	0.0011	0.58 (0.40–0.84)	0.004	0.19 (0.07–0.53)	0.002	0.20 (0.07–0.57)	0.002
Theft	0.51 (0.36–0.72)	0.0001	0.56 (0.39–0.81)	0.002	0.36 (0.17–0.74)	0.006	0.44 (0.20–0.94)	0.034
Drugs	1.29 (0.94–1.76)	0.1151	1.10 (0.77–1.57)	0.616	1.88 (1.11–3.18)	0.019	1.45 (0.80–2.62)	0.223
<b>Women</b>								
Theft	0.29 (0.16–0.52)	0.0001	0.41 (0.21–0.80)	0.009	0.28 (0.04–2.17)	0.222	0.35 (0.04–2.92)	0.329
Drugs	6.10 (4.08–9.10)	0.0001	3.55 (2.22–5.69)	<0.001	0.68 (0.14–3.17)	0.621	0.37 (0.07–1.86)	0.227

1. Adjusted for age, UK-born, prisoner type, social class, marital status, educational qualifications.

**Table 4** Prison survey: odds ratios (95% CI) for effect of previous convictions and imprisonment in Black and South Asian prisoners compared with White prisoners

Variable	Black				South Asian			
	Unadjusted	P	Adjusted <sup>1</sup>	P	Unadjusted	P	Adjusted <sup>1</sup>	P
<b>Men</b>								
Homicide	0.26 (0.08–0.81)	0.021	0.29 (0.09–0.98)	0.0459	0.33 (0.04–2.37)	0.268	0.51 (0.06–4.04)	0.523
GBH, assault	0.47 (0.36–0.62)	<0.001	0.61 (0.45–0.82)	0.0009	0.33 (0.19–0.56)	<0.001	0.56 (0.31–1.00)	0.049
Sex offence	0.36 (0.16–0.83)	0.017	0.49 (0.20–1.17)	0.1094	0.70 (0.22–2.27)	0.557	1.10 (0.31–3.83)	0.887
Arson	0.14 (0.04–0.45)	0.001	0.15 (0.05–0.47)	0.0013	0.37 (0.09–1.51)	0.166	0.43 (0.10–1.85)	0.260
Robbery	1.05 (0.78–1.41)	0.741	1.36 (0.99–1.87)	0.0592	0.54 (0.27–1.06)	0.072	0.85 (0.42–1.72)	0.644
Burglary	0.38 (0.30–0.49)	<0.001	0.54 (0.40–0.72)	0.0001	0.27 (0.17–0.43)	<0.001	0.54 (0.32–0.92)	0.023
Fraud	0.40 (0.28–0.59)	<0.001	0.47 (0.31–0.70)	0.0002	0.38 (0.18–0.80)	0.011	0.53 (0.24–1.14)	0.106
Escape custody	0.39 (0.30–0.51)	<0.001	0.48 (0.36–0.65)	0.0001	0.24 (0.13–0.41)	<0.001	0.37 (0.20–0.68)	0.001
Previous conviction	0.34 (0.26–0.45)	<0.001	0.56 (0.40–0.77)	0.0005	0.25 (0.16–0.40)	<0.001	0.65 (0.37–1.14)	0.131
Previous prison	0.57 (0.44–0.73)	<0.001	0.84 (0.62–1.13)	0.2487	0.33 (0.21–0.53)	<0.001	0.66 (0.39–1.12)	0.124
<b>Women</b>								
Burglary	0.30 (0.19–0.47)	<0.001	0.52 (0.31–0.88)	0.0149	0.25 (0.05–1.18)	0.080	0.50 (0.09–2.65)	0.413
Drug	0.37 (0.21–0.65)	<0.001	0.45 (0.23–0.88)	0.0186	0.67 (0.14–3.14)	0.613	1.22 (0.23–6.32)	0.816
Fraud	0.28 (0.15–0.49)	<0.001	0.43 (0.23–0.83)	0.0113	0.25 (0.03–1.93)	0.182	0.43 (0.05–3.62)	0.437
Escape custody	0.26 (0.14–0.46)	<0.001	0.44 (0.23–0.85)	0.0148	0.23 (0.03–1.81)	0.162	0.50 (0.06–4.33)	0.528
Previous conviction	0.28 (0.19–0.42)	<0.001	0.50 (0.30–0.81)	0.0055	0.37 (0.11–1.28)	0.116	0.94 (0.23–3.91)	0.933
Previous prison	0.49 (0.32–0.75)	0.001	0.89 (0.52–1.51)	0.6682	0.38 (0.08–1.75)	0.212	0.80 (0.14–4.37)	0.792

GBH, grievous bodily harm.

1. Adjusted for age, UK-born, prisoner type, social class, marital status, educational qualifications.

women were less likely to be rated as having post-traumatic stress. Table 5 also demonstrates that both male and female Black prisoners were less likely to have

attempted suicide, to have harmed themselves during the current prison term, or to have engaged in hazardous drinking before imprisonment. South Asian men

were also less likely to have previously attempted suicide. No differences were found between South Asian and White women.

**Table 5** Prison survey: odds ratios (95% CI) for effect of self-reported psychiatric morbidity in Black and South Asian prisoners compared with White prisoners

Variable	Black				South Asian			
	Unadjusted	P	Adjusted <sup>1</sup>	P	Unadjusted	P	Adjusted <sup>1</sup>	P
<b>Men</b>								
Probable psychosis <sup>2</sup>	0.40 (0.20–0.79)	0.008	0.43 (0.21–0.88)	0.021	0.69 (0.25–1.91)	0.475	0.84 (0.29–2.45)	0.755
PTSD	0.43 (0.17–1.06)	0.068	0.43 (0.17–1.11)	0.081	1.00 (0.31–3.25)	0.999	1.02 (0.29–3.60)	0.970
Parasuicide	0.17 (0.10–0.28)	<0.001	0.19 (0.11–0.32)	<0.001	0.37 (0.18–0.74)	0.005	0.44 (0.21–0.92)	0.029
Self-harm current term	0.21 (0.08–0.57)	0.002	0.19 (0.07–0.52)	0.001	0.41 (0.10–1.68)	0.213	0.34 (0.08–1.46)	0.147
Hazardous drinking	0.33 (0.25–0.42)	<0.001	0.37 (0.25–0.42)	<0.001	0.48 (0.30–0.76)	0.002	0.64 (0.39–1.06)	0.080
<b>Women</b>								
Probable psychosis <sup>2</sup>	0.26 (0.11–0.61)	0.002	0.34 (0.13–0.86)	0.023	0.57 (0.07–4.51)	0.594	0.85 (0.10–7.16)	0.881
PTSD	0.19 (0.05–0.80)	0.023	0.18 (0.04–0.86)	0.031	1.28 (0.16–10.2)	0.816	1.11 (0.13–9.84)	0.924
Parasuicide	0.28 (0.18–0.44)	<0.001	0.36 (0.21–0.61)	<0.001	0.47 (0.12–1.81)	0.274	0.74 (0.18–3.06)	0.673
Self-harm current term	0.30 (0.12–0.76)	0.011	0.20 (0.07–0.58)	0.003	0.80 (0.10–6.33)	0.830	0.80 (0.09–6.79)	0.836
Hazardous drinking	0.43 (0.28–0.65)	<0.001	0.45 (0.27–0.74)	0.002	0.51 (0.13–1.94)	0.324	0.70 (0.17–2.91)	0.626

PTSD, post-traumatic stress disorder.

1. Adjusted for age, UK-born, prisoner type, social class, marital status, educational qualifications.

2. Based on responses to augmented Psychosis Screening Questionnaire.

**Table 6** Prison survey: odds ratios (95% CI) for effect of drug dependence and injecting behaviour in Black and South Asian prisoners compared with White prisoners

Variable	Black				South Asian			
	Unadjusted	P	Adjusted <sup>1</sup>	P	Unadjusted	P	Adjusted <sup>1</sup>	P
<b>Men</b>								
Cannabis only	1.50 (1.01–2.22)	0.043	1.68 (1.10–2.56)	0.017	0.79 (0.32–2.00)	0.624	0.84 (0.32–2.19)	0.728
Heroin	0.18 (0.11–0.31)	<0.001	0.21 (0.12–0.36)	<0.001	0.71 (0.39–1.28)	0.256	1.02 (0.54–1.93)	0.955
Methadone	0.05 (0.01–0.32)	0.002	0.06 (0.01–0.40)	0.004	0.17 (0.02–1.26)	0.083	0.23 (0.03–1.77)	0.160
Amphetamine	0.13 (0.06–0.26)	<0.001	0.15 (0.07–0.31)	<0.001	0.18 (0.06–0.58)	0.004	0.23 (0.07–0.75)	0.015
Crack cocaine	1.09 (0.76–1.56)	0.647	1.42 (0.97–2.08)	0.073	0.91 (0.45–1.85)	0.799	1.60 (0.75–3.40)	0.225
Cocaine powder	0.34 (0.18–0.65)	0.001	0.39 (0.20–0.76)	0.006	0.81 (0.35–1.90)	0.633	1.09 (0.45–2.65)	0.845
Injected	0.10 (0.06–0.18)	<0.001	0.11 (0.06–0.20)	<0.001	0.25 (0.10–0.58)	0.001	0.26 (0.11–0.64)	0.003
<b>Women</b>								
Cannabis only	1.98 (0.92–4.29)	0.082	2.13 (0.79–5.73)	0.133	2.54 (0.31–20.7)	0.385	3.74 (0.41–34.4)	0.245
Heroin	0.14 (0.07–0.28)	<0.001	0.22 (0.10–0.46)	<0.001	–	–	–	–
Methadone	0.05 (0.01–0.34)	0.003	0.08 (0.01–0.61)	0.015	–	–	–	–
Amphetamine	0.04 (0.01–0.29)	0.001	0.05 (0.01–0.38)	0.004	0.55 (0.07–4.32)	0.567	0.70 (0.08–6.30)	0.748
Crack cocaine	0.81 (0.47–1.37)	0.428	1.14 (0.61–2.12)	0.684	–	–	–	–
Cocaine powder	0.20 (0.05–0.83)	0.027	0.37 (0.08–1.62)	0.186	1.36 (0.17–10.9)	0.775	2.70 (0.28–26.1)	0.391
Injected	0.07 (0.03–0.18)	<0.001	0.08 (0.03–0.21)	<0.001	–	–	–	–

1. Adjusted for age, UK-born, prisoner type, social class, marital status, educational qualifications.

## Neurotic disorders

Ethnic subgroups were compared in terms of the frequency of neurotic symptoms identified from the CIS-R. Few differences were found. However, Black males were less likely to report forgetfulness/loss of concentration, and South Asian males less

likely to report irritability, than White males. Black women prisoners were more likely to report worries about physical health, and less likely to report anxiety, than White women prisoners. There were no differences between either Black or South Asian subgroups and White prisoners, according to gender, for an overall

measure of neurotic symptoms using a CIS-R cut-off score of 12.

## Drug use

Table 6 compares reported drug use, including injecting behaviour. Black male and female prisoners were less likely to

**Table 7** Prison survey: odds ratios (95% CI) for effect of personality disorder in Black and South Asian prisoners compared with White prisoners

Variable	Black				South Asian			
	Unadjusted	<i>P</i>	Adjusted <sup>1</sup>	<i>P</i>	Unadjusted	<i>P</i>	Adjusted <sup>1</sup>	<i>P</i>
<b>Men</b>								
Avoidant	0.53 (0.32–0.88)	0.013	0.52 (0.31–0.88)	0.015	0.22 (0.05–0.89)	0.034	0.23 (0.06–0.99)	0.048
Dependent	0.92 (0.55–1.52)	0.735	1.08 (0.63–1.85)	0.789	0.97 (0.39–2.45)	0.956	1.20 (0.45–3.17)	0.719
Obsessive–compulsive	1.15 (0.80–1.66)	0.455	1.21 (0.81–1.81)	0.342	1.16 (0.59–2.28)	0.677	1.28 (0.62–2.63)	0.506
Paranoid	1.08 (0.84–1.39)	0.556	1.29 (0.98–1.71)	0.073	0.66 (0.40–1.11)	0.115	0.88 (0.51–1.51)	0.639
Schizotypal	0.87 (0.62–1.24)	0.448	1.02 (0.70–1.49)	0.904	0.44 (0.19–1.03)	0.057	0.54 (0.23–1.30)	0.169
Schizoid	1.25 (0.95–1.64)	0.109	1.31 (0.97–1.76)	0.075	1.11 (0.66–1.86)	0.689	1.12 (0.65–1.93)	0.685
Histrionic	1.13 (0.43–2.93)	0.805	1.15 (0.42–3.12)	0.790	1.74 (0.41–7.41)	0.456	2.11 (0.46–9.77)	0.340
Narcissistic	2.72 (1.60–4.62)	<0.001	2.47 (1.38–4.41)	0.002	0.99 (0.24–4.15)	0.990	0.89 (0.20–3.86)	0.875
Borderline	0.33 (0.20–0.53)	<0.001	0.34 (0.21–0.56)	<0.001	0.33 (0.13–0.83)	0.018	0.38 (0.15–0.98)	0.044
Antisocial	0.39 (0.30–0.51)	<0.001	0.47 (0.35–0.62)	<0.001	0.27 (0.16–0.45)	<0.001	0.40 (0.23–0.71)	0.002
Any personality disorder	0.67 (0.51–0.88)	0.004	0.85 (0.63–1.16)	0.314	0.54 (0.33–0.87)	0.012	0.83 (0.48–1.43)	0.507
<b>Women</b>								
Avoidant	0.43 (0.24–0.75)	0.003	0.69 (0.36–1.34)	0.275	1.31 (0.34–5.00)	0.696	3.01 (0.70–12.8)	0.137
Dependent	0.24 (0.09–0.68)	0.007	0.39 (0.13–1.21)	0.103	–	–	–	–
Obsessive–compulsive	1.41 (0.88–2.27)	0.152	1.49 (0.84–2.66)	0.175	–	–	–	–
Paranoid	1.63 (1.12–2.36)	0.011	2.54 (1.56–4.12)	<0.001	1.32 (0.40–4.36)	0.653	2.77 (0.73–11.5)	0.134
Schizotypal	0.68 (0.42–1.11)	0.126	1.00 (0.56–1.77)	0.987	0.76 (0.16–3.56)	0.727	1.30 (0.26–6.59)	0.754
Schizoid	2.32 (1.59–3.38)	<0.001	2.66 (1.66–4.27)	<0.001	2.62 (0.79–8.71)	0.115	4.36 (1.22–15.5)	0.023
Histrionic	0.56 (0.13–2.46)	0.440	0.96 (0.20–4.67)	0.963	3.79 (0.46–31.5)	0.218	10.8 (0.91–127.5)	0.060
Narcissistic	5.41 (2.37–12.4)	<0.001	5.48 (1.90–15.8)	<0.001	–	–	–	–
Borderline	0.44 (0.25–0.75)	0.003	0.68 (0.37–1.27)	0.226	1.17 (0.30–4.45)	0.824	2.22 (0.52–9.42)	0.278
Antisocial	0.39 (0.25–0.61)	<0.001	0.64 (0.38–1.09)	0.100	0.15 (0.02–1.20)	0.074	0.27 (0.03–2.28)	0.229
Any personality disorder	1.35 (0.87–2.10)	0.185	2.31 (1.27–4.20)	0.006	–	–	2.57 (0.56–11.9)	0.227

1. Adjusted for age, UK-born, prisoner type, social class, marital status, educational qualifications.

report having used most illicit drugs, or to have injected, compared with White prisoners. However, more Black male prisoners reported cannabis use. There were no differences between Black and White prisoners in their use of crack cocaine. South Asian prisoners showed few differences from White prisoners, except that fewer men had used amphetamines or injected.

**Personality disorder**

Table 7 compares categories of personality disorder derived from the SCID-II questionnaire between Black and South Asian prisoners and White ethnic subgroups. Overall, more female Black prisoners received a diagnosis of personality disorder than White females, but there were no differences between other subgroups. However, there were some differences relating to individual categories of personality disorder.

**DISCUSSION**

**Methodological considerations**

The proportion of subjects sampled from each ethnic subgroup in the survey corresponded to Home Office figures for England and Wales for 1997. Nevertheless, the small numbers in ethnic subgroups (which were not oversampled) resulted in certain limitations. It would have been better to have used diagnostic data based on clinician interviews rather than self-report, but logistic regression could not be carried out on the small subsample interviewed by clinicians. However, unadjusted analyses did not reveal trends at variance with self-report data.

Differences observed between the criminal histories of the different ethnic subgroups are the outcome of complex processes operating within the criminal justice system: the reporting and detection of crime by the police, decisions to prosecute by the Crown Prosecution Service,

subsequent verdicts in courts and sentencing. For those with mental disorder, identification by prison health care staff, the referral of prisoners for second opinions and gatekeeping by mental health professionals all influence the prevalence of prisoners with severe mental disorder. None of these factors can be adequately explored using a cross-sectional design.

Nevertheless, it is of concern that the rate of imprisonment in England and Wales remains markedly higher for Black than for White men and women. This phenomenon has been observed in previous criminological studies both in the UK and USA (Home Office, 1992; Donziger, 1996; Home Office, 2000). It is not accounted for by the number of foreign nationals in the Black subgroup of prisoners. Imprisonment ratios were slightly increased for Black men when this factor was controlled for. However, there was a fall in the ratio of imprisoned Black men when compared with the 1992 Home

Office study. The rate of imprisonment was somewhat lower for South Asian men than White men, and for South Asian women it was less than a quarter that for White women; these trends are generally similar to those observed for admissions to secure forensic psychiatry services of patients who have committed serious offences (Coid *et al*, 2000), except that such admissions among South Asian men with mental disorders were even lower than their rates of imprisonment.

### Criminal histories

The criminal histories of the Black and White ethnic subgroups showed important differences. More Black men were imprisoned following robberies and firearm offences, but fewer for burglaries and theft; more Black women for drug offences, but fewer for thefts. Serious sexual offences by Black males were not more common, contrasting with previous observations of offenders with mental illness (Coid *et al*, 2000) and with previous UK prison studies (Smith, 1997). This suggests that patterns of sexual offending, or the processing of Black defendants charged with sexual offending, may have changed over time. Other differences may be partially explained by the fact that convictions for robbery and firearm and certain drug offences carry heavy penalties, and that more Black defendants elect for trial in the Crown Court, where longer sentences may be imposed following a conviction. It was of some concern that, despite an absence of overall differences between ethnic subgroups in previous experience of imprisonment, more Black male and female prisoners reported that they had no previous convictions. This study is unable to explore further the question of whether Black defendants had been treated more harshly in the courts.

It is of considerable interest that the criminal histories of Black prisoners were characterised by fewer acquisitive offences. This is reflected in the findings that more White prisoners reported living off the proceeds of crime before imprisonment. Moreover, extensive acquisitive offending is often associated with drug misuse, especially opiate dependence (Coid *et al*, 2000), and with antisocial personality disorder, which were both more common in White prisoners. In contrast, the drug-related offending of Black women may have differed, in that it involved offences

of supplying and trafficking rather than possession.

Although South Asians were relatively unlikely to be imprisoned, the patterns of offending and the factors relevant to offending behaviour appeared largely the same as for White prisoners.

### Psychiatric morbidity

We found that ethnic minority subgroups made no excess contribution to the high levels of psychiatric morbidity in the overall prisoner population (Singleton *et al*, 1998). This is in contrast with the results of local studies of prisons in England and Wales (Brooke *et al*, 1996), and the overrepresentation of African–Caribbeans transferred from prison to psychiatric hospital (Banerjee *et al*, 1995; Bhui *et al*, 1998). Considerable credence should be given to the current nationwide study. Few differences were found between South Asians and Whites of either gender for any measure of psychopathology. This would suggest that the level of exposure to risk factors for both criminal behaviour and psychiatric morbidity were very similar. However, the lower rates of imprisonment among South Asians must put into question whether the risk factors leading to criminal behaviour are less prevalent among South Asians in the general population, especially women, and whether certain protective factors operate within this ethnic subgroup.

However, despite their higher rates of imprisonment, Black male and female prisoners demonstrated lower levels of psychopathology on most measures except personality disorders. These findings contrast with those from psychiatric services in England and Wales. Black patients are more likely to have had contact with the police and forensic services (McGovern & Cope, 1987), to be treated in intensive care facilities if detained under the Mental Health Act (Moodley & Thornicroft, 1988), to have criminal convictions (Wessely *et al*, 1994) and to be admitted more frequently to secure forensic psychiatry services (Coid *et al*, 2000). These discrepancies in psychiatric hospital admissions are explained by higher rates of major mental disorder, primarily schizophrenia, in the African–Caribbean subgroup. In contrast, Black prisoners in this study demonstrated no differences in unadjusted measures of functional psychosis from the SCAN interview, and a reduced

adjusted risk of probable psychosis derived from the PSQ. The high prevalence of functional psychosis observed in prisoners in England and Wales (Singleton *et al*, 1998) is not therefore accounted for by an excess of African–Caribbeans with these conditions, and contrasts markedly with the situation in psychiatric services. The question whether independent processes are in operation, leading to disproportionate numbers of African–Caribbeans with psychosis in psychiatric hospitals, and disproportionate numbers in prison despite lower levels of psychiatric morbidity, requires further study. This phenomenon might be the outcome of a generally increased tendency for African–Caribbeans to be criminalised to an extent that outweighs the tendency for people with mental illnesses to be imprisoned. An increased likelihood of Black people with psychosis being identified and diverted to secure psychiatric facilities at an early stage runs counter to evidence from other sources.

### Personality disorder

Black inmates of secure psychiatric hospitals are considerably less likely than their White counterparts to have a primary diagnosis of personality disorder (Coid *et al*, 1999). This could represent true differences in the prevalence of personality disorders in different ethnic groups or the result of clinical selection by gatekeepers (Coid *et al*, 2000). The current study suggests differences in the profile of personality disorders between Black and White male prisoners, but no difference in overall rate. Black women prisoners appear to have a higher overall prevalence than Whites of personality disorder, mainly paranoid, schizoid and narcissistic personality disorder.

If this is the case, why are Black women not found more frequently in secure psychiatric hospitals? One reason may be that Black prisoners do not have an excess of borderline and antisocial personality disorders, the disorders most commonly seen in patients in secure units (Coid *et al*, 1999). There are thus no differences in the prevalence of personality disorders that could account for the lower proportion of Black people in secure units. This is more likely to involve the effect of ethnic group on the treatment-seeking behaviour of prisoners or the gatekeeping process governing access to treatment.

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## CLINICAL IMPLICATIONS

- Prisoners display high levels and a broad range of psychiatric morbidity.
- Prison staff need to be aware of the generally high rate of psychiatric morbidity in prisoners from all ethnic groups.
- There is no evidence of an excess of psychosis in Black prisoners.

## LIMITATIONS

- Clinical interviews were restricted to one-fifth of the sample.
- Analyses were largely based on self-report data.
- Self-report of personality disorder probably overrecognises cases.

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