THE DEMOGRAPHY OF NURSES AND PATIENTS ON ACUTE PSYCHIATRIC WARDS IN ENGLAND

ABSTRACT

Aims and objectives: To describe the ethnic and demographic composition of staff and patients on acute psychiatric wards in England.

Background: A significant proportion of the UK population (7.6%) belong to an ethnic minority, and there are concerns that ethnic minority patients are not well served by psychiatry, in particular that they are subject to excessive force and coercion.

Design: Survey of a random sample of psychiatric wards in three regions.

Methods: A survey was conducted of staff (n = 1536) and patients (n = 11,128) on 136 acute admission psychiatric wards.

Results: Ethnic minority patients were more likely to be admitted with a diagnosis of schizophrenia, younger, more likely to be admitted for a risk of harm to others and more likely to be legally detained. The association between ethnic minority status and detention remains, even when risk, age, gender and diagnosis are taken into account. Ethnic minority patients come from areas of greater social deprivation and fragmentation. Ethnic concordance between staff and patients varies, but the greatest difference is found in London where the proportion of minority staff is greater than the proportion of minority patients.

Conclusions: There continues to be evidence that ethnic minority patients are subject to an excessive amount of legal coercion in English mental health services. However

the proportion of staff belonging to an ethnic minority is greater than the proportion of patients.

Relevance to clinical practice: Solutions to the problem of excessive use of legal coercion with ethnic minority patients need to be found. Changes of recruitment strategies are required if concordance is to be achieved.

INTRODUCTION

The UK has a long history as a land of immigration, beginning with invading forces of Romans, Saxons, Vikings and Normans from other parts of Europe up until the 11th Century (Johnson, 1992). From the sixteenth century onwards, the first Black immigrants arrived in small numbers following Britain's involvement in the slave trade. By the end of the 18th Century, at the height of the slave trade, there was a relatively large Black population estimated between 10-20,000, concentrated in London and the seaports (Fryer, 1984). But it is since the end of the Second World War that the ethnic minority population in the UK has really grown, following the passing of the 1948 British Nationality Act and the government's encouragement of people from the Commonwealth countries to come to the UK to work (Hansen, 2000). The first wave of this economic migration was from the Caribbean in the 1950s and 1960s, when job opportunities were better in the UK than the Caribbean. Many of those migrants were recruited for public sector employment, such as working on the London buses, underground and in the health sector (Office for National Statistics, 1996). Among these migrants were nurses, particularly from the Caribbean and Africa, recruited to work in the UK's new National Health Service (Winkelmann-Gleed, 2006).

The second wave of economic migration to the UK was from India and Pakistan, peaking in the late 1960s and early 1970s, including the migration of Asians from East Africa, both voluntary migration but also involuntary, with the expulsion of all Asians from Uganda in 1972 (Robinson, 1986). However, since the 1970s immigration from Commonwealth countries has slowed down as the UK government

began to restrict immigration with a series of legislation, culminating in the 1971 Immigration Act (Hansen, 2000). From the 1990s onwards, much of the migration to the UK has been in the form of refugees and asylum seekers from regions affected by war or political oppression, such as from the former Yugoslavia, Somalia, Sri Lanka and Turkey (CVS Consultants & Migrant & Refugee Communities Forum, 1999). Most recently, new waves of economic migrants have been arriving in the UK from Central and Eastern Europe, with a sharp increase in numbers since 2004 when eight new member states from that region joined the European Union (Gask, 2006).

The UK is now a multiethnic society; according to most recent national population census in 2001 the size of the minority ethnic population was 4.5 million, representing 7.6% of the total UK population. The minority ethnicity population is highly concentrated geographically in the large urban centres, with nearly half (48%) living in London, comprising 29% of all London residents (Office for National Statistics, 2002). Regarding the composition of the minority ethnic population, the largest group in 2001 were Asian or Asian British (the UK census uses self-identification ethnic group categories), followed by Black Caribbeans, Black Africans and those of Mixed ethnic backgrounds (Office for National Statistics, 2002). However, these broad minority ethnic group categories obscure great diversity; for example, the Asian population includes Indians, Pakistanis, and Bangladeshis. These categories are also heterogeneous, for example the Indian population in the UK is composed of a variety of regional and religious groups from the Indian continent as well as from East Africa. There are also a variety of languages spoken such as Hindi, Gujarati, Bengali, Marathi, Multani, Sindhi and Tamil (Commission for Racial Equality, 2007).

There is considerable concern about the psychiatric care and mental health status of ethnic minorities in the UK. Some minority communities appear to have high rates of psychiatric morbidity; for example Black Caribbean people have been found to have higher prevalence rates of mental illness, particularly psychosis (King *et al.*, 2005;Bebbington *et al.*, 2000). The recent Healthcare Commission's 'Count Me In' Census (2007) of mental health inpatient in NHS and private healthcare hospitals found that patients from a black and ethnic minority (BME) background are likely to have a different experience and care pathway to white patients whilst in hospital. This survey reported that 21% of all patients were from black and minority ethnic (BME), demonstrating a huge over-representation in mental health inpatient settings compared to the general population. Various theories have been advanced for this, including: increased migration by those likely to become mentally ill, the stress of the migration experience, and the effects of racism, discrimination and poverty (Littlewood, 2004). Five per cent of the mental health inpatients reported that English was not their first language; the biggest non-English speaking groups were Bangladeshi (54%), Chinese (51%), Other (44%) and Pakistani (41%). About 2% of inpatients said that they required an interpreter. There is general concern that because of language barriers and cultural misunderstandings, some people might be misdiagnosed or receive the wrong treatment. This problem has been highlighted by organisations working with refugees and asylum seekers, with a general lack of interpreters in the mental health system plus other issues such as interpreters not having a good knowledge of medical and mental health terms and how to convey non-verbal language (CVS Consultants & Migrant & Refugee Communities Forum, 1999).

Another issue of importance is the high use of coercive measures (detention under the Mental Health Act, seclusion, etc) with ethnic minority patients. Although whether this actually occurs when all alternative explanations are taken into account is disputed (Gudjonsson *et al.*, 2000), UK psychiatry has been accused of institutional racism (Prins, 1993;Blofeld *et al.*, 2003).

One way to address these concerns to ensure that nursing staff match the demographic characteristics of patients they care for (Department of Health, 2005;Department of Health, 2003). Patients prefer staff from the same ethnic background (Napoles-Springer *et al.*, 2005;Chen *et al.*, 2005;Garcia *et al.*, 2003;Saha *et al.*, 1999), and there is evidence that this leads to better patient participation (Cooper-Patrick *et al.*, 1999), as well as improved healthcare team performance (Temkin-Greener *et al.*, 2004).

AIM

To describe the demography of nurses and patients on acute psychiatric wards in England, and the degree to which such matching is achieved.

METHOD

Design

A survey of the characteristics of inpatients and nursing staff on acute psychiatric wards in three regions of England.

Sample and data collection

The data was collected as part of the City-128 study of observation and outcomes, a multivariate cross sectional study to examine the rates of self-harm on acute psychiatric wards, and how they were related to patient characteristics, the service environment, physical environment, rates of conflict and containment, and staff factors (Bowers *et al.*, 2007). Random samples of acute psychiatric wards were taken in three regions of England: the North West; East and West Midlands; and London. These regions were chosen to reasonably represent north, central and southern England. The survey was undertaken on wards from 67 hospitals in 26 NHS Mental Health Trusts. They served a total population of just under 19 million people, approximately 39% of the population of England. The 136 acute psychiatric wards that participated in the study represented 25% of the estimated total of 551 wards in England.

Each ward returned data over a six month period by completion of a form at the end of every shift. On this form new admissions were described in tick box fashion on a limited number of variables. The postcode was also requested so that patients could be matched to local area deprivation indicators: the Index of Multiple Deprivation, IMD (Noble *et al.*, 2004); and Social Fragmentation Score, SFS (Congdon, 1996). Exclusion of all admissions with 3 or more missing data items resulted in the retention of 11,128 admissions, 4,112 of which were accompanied by valid postcodes.

Consenting staff on the wards completed a questionnaire detailing their demographic characteristics and experience of working in psychiatry. A total of 1536 questionnaires were returned (55% response rate).

Data analysis

All data was analysed using SPSS v12. Staff and patient subgroups were contrasted using Chi Square tests, while Pearson correlation was used to explore the relationship between staff/patient characteristics, deprivation, and other ward features. Logistic regression was used with the patient data to identified features associated with compulsory detention under the Mental Health Act.

FINDINGS

Of the study patients, 94% lived in urban areas, in comparison to 80% for England as a whole (ONS 2004), and 27% belonged to an ethnic minority group, as compared to 8% of the UK population as a whole. These statistics reflect the participation of London, which provided one third of the sample, and is a major urban area where 48% of the total UK ethnic minority population reside (Office for National Statistics, 2002).

Staff and patient demography

Table 1 profiles the staff and Table 2 the patients, in terms of their age, gender and ethnicity. The modal age group of staff was 30-39 years, most had been working in their current position for between one and three years, and working in psychiatry for more than five years. Two thirds were female, and of the nurses, the largest group was that of staff nurse grades (C, D &E). Whilst the majority of nurses were of white ethnicity, the largest minority group was African

Female nurses were significantly younger than male nurses ($\chi^2 = 25.51$, df = 5, p = 0.001), being more likely to be in the 20-29 age group, and were more likely to be of white ethnicity ($\chi^2 = 34.46$, df = 5, $p < 0.001$). African nurses were less likely to have been in their current post more than a year ($\chi^2 = 40.24$, df = 15, $p < 0.001$), had a shorter duration of time working in psychiatry ($\chi^2 = 54.38$, df = 15, $p < 0.001$), and were more often working in staff nurse grades ($\chi^2 = 46.56$, df = 20, $p < 0.001$) and were younger in age ($\chi^2 = 74.67$, df = 25, p = 0.001).

The majority of patients were over 35 years of age, and there was an almost exactly even split between the genders. The majority were of white ethnicity, but numbers of the different ethnic minority groups were evenly distributed, with similar numbers of Caribbeans, Africans, Asians and other ethnicities. Only the Irish group was smaller. Just under a third of patients were admitted compulsorily under the Mental Health Act, and a similar number had a diagnosis of schizophrenia. The majority were admitted for risk of harm to themselves, and a minority for risk of harm to others.

Female patients were more likely to be white and less likely to be Asian ($\chi^2 = 16.99$, df = 5, p = 0.005), much less likely to have a diagnosis of schizophrenia ($\chi^2 = 395.46$,

df = 1, $p < 0.001$), more likely to be aged over 35 years ($\chi^2 = 194.2$, df = 1, $p < 0.001$), less likely to be sectioned ($\chi^2 = 38.11$, df = 1, $p < 0.001$), less likely to be admitted for risk of harm to others ($\chi^2 = 250.39$, df = 1, $p < 0.001$), but no more nor less likely to be admitted for risk of harm to self.

All ethnic minority patients are more likely to be admitted with a diagnosis of schizophrenia, however this association was strongest for Caribbeans, then Africans, then Asians, and weaker but still visible for Irish patients and those of other ethnicities ($\chi^2 = 427.3$, df = 5, $p < 0.001$). A similar pattern is visible with regard to age and compulsory detention, with ethnic minority patients being younger and more likely to be formally detained, only in the case of youth the association is most pronounced for African patients and absent for Irish patients ($\chi^2 = 138.54$, df = 5, $p < 0.001$), and in the case of detention the association is equally strong for Africans and Caribbeans, and still present for Irish patients ($\chi^2 = 434.42$, df = 5, $p < 0.001$). In comparison to white patients, all ethnic minority patients with the exception of the Irish are less likely to be admitted for risk of harm to self ($\chi^2 = 97.09$, df = 5, $p < 0.001$), and all minority patients including the Irish are more likely to be admitted for risk of harm to others ($\chi^2 = 262.3$, df = 5, $p < 0.001$). The association between ethnic minority status remains, even when risk, age, gender and diagnosis are taken into account in a logistic regression equation (see Table 3).

Staff, patients and ward catchment areas

For patients, the Index of Multiple Deprivation of the area served by the ward was associated with fewer white patients and more of most ethnic minority categories (see

Table 4). It was also associated with a high proportion of admissions suffering from schizophrenia, detained under the mental health act, younger and admitted for risk of harm to others. Social Fragmentation showed exactly the same pattern of relationships, only more strongly. When admitted, ethnic minority patients were likely to find the ward environment of a lower quality, but had a better qualified workforce to care for them.

The Index of Multiple Deprivation was not associated with any feature of the ward staff (see Table 5). However Social Fragmentation was greater in the areas served by wards with higher numbers of African staff, and lower in those areas served by wards with higher numbers of white staff. Greater numbers of white staff were associated with larger wards with a better physical environment quality and lower vacancy rate, but with a poorer skill mix. These same variables were reversed for higher numbers of African staff (i.e. smaller wards, worse environment, higher vacancy and richer skill mix).

Demographic concordance between staff and patients

Eleven scores for demographic concordance vs. non-concordance were created. By concordance, we mean wards where the demographic characteristics of staff and patients are matched, for example the proportions of each gender the same amongst staff and patients. These scores can be calculated in a number of different ways where there are multiple categories, as in the case of ethnicity. Further exploration of the data shows that London is significantly different in nurse staffing and patient demographics as compared to the rest of the sample. These two categories therefore

also need to be explored in order to obtain an accurate overview of the situation. Scores and comparisons are presented in Table 6.

Age concordance. Calculated by subtracting the proportion of patients aged 35 and under from the proportion of staff aged 30 and under (the data source categories did not match). Positive scores represent more older staff than patients, zero (or just below zero) represents a good match, and negative scores represent more younger staff than patients.

Gender concordance. Calculated by subtracting the proportion of patients male from the proportion of staff male. Positive scores represent more male staff than patients, zero represents a good match, and negative scores represent more female staff than patients.

Ethnic concordance 1 (simple absolute concordance). Calculated by taking the absolute difference (i.e. disregarding the sign) between the proportion of staff white and the proportion of patients white. Low scores represent a good match, high scores a bad match, but composition of the minority nurses and patients may still differ without being reflected in this score.

Ethnic concordance 2 (complex absolute concordance). Calculated by summing the absolute differences for each ethnic category. Low scores represent a good match, high scores bad match. Perhaps overall the most accurate measure, but does not identify within which categories any mismatch occurs.

Ethnic concordance 3 (simple directional concordance). Calculated by subtracting the proportion of patients white from the proportion of staff white. Positive scores represent more majority staff than patients, zero represents a good match, and negative scores represent more minority staff than patients.

White concordance, Irish concordance, African concordance, Caribbean concordance, Asian concordance, Other ethnicity concordance. Each of these scores was calculated by subtracting the proportion of patients within the category from the proportion of staff within the same category. Positive scores therefore represent more within category staff than patients, zero represents a good match, and negative scores represent more outside category staff than patients. The white concordance score is the same as 'Ethnic concordance 3'.

Because they are based upon proportions, in all cases, scores represent percentage point differences in group composition (i.e. 0.01 represents a one percentage point difference).

Overall, nursing staff are older than patients, however this non-equivalence is higher in London, and arises because the staff in London are older than the staff elsewhere ($t = 2.26$, $df = 134$, $p = 0.025$), and the patients in London are younger than the patients elsewhere ($t = 3.92$, $df = 134$, $p < 0.001$). Overall, patients are more likely to be male than nursing staff, but in this case London nurses have a greater concordance with patients. While the patient gender mix does not differ between London and elsewhere, there are a greater proportion of male staff in London's workforce ($t = 3.81$, $df = 134$, $p < 0.001$), leading to a better match in this respect.

On all three overall scores of ethnic concordance, staff do not match patients. Although London has high numbers of ethnic minority staff and patients, there is significantly less ethnic concordance on London's psychiatric wards. The cultural concordance 3 score demonstrates that this arises because there is an excess of ethnic minority staff over patients in London. Overall there is a 9 percentage point excess of ethnic minority staff, but while outside London there is concordance on this score, in London there is a 29 percentage point excess of ethnic minority nurses over patients. Further examination of the table shows that this ethnic non-equivalence arises because there is a high number of African staff, and low numbers of white (and to a lesser degree Asian) staff. These features are magnified by the differences between London and elsewhere. In London the proportion of African staff is very high, with White and Caribbean staff under represented; while outside London there is a strong under representation of Asian staff.

DISCUSSION

The strong association between ethnic minority status and compulsory admission has been reported before (Bhui K. *et al.*, 2003). It has been suggested that this association is due to raised rates of schizophrenia in minority populations and/or to different demographic profiles of particular communities (e.g. more young people). However the logistic regression undertaken demonstrates that both Africans and Caribbeans are nearly three times more likely to be compulsorily admitted, even when age, gender, diagnosis and risk are taken into account. The AESOP study (Morgan *et al.*, 2006) has

demonstrated that some, but not all, of this differential arises through different routes of referral and access to psychiatric care, with minority patients less likely to consult their GP, and more likely to access care via the police. That still leaves open the question why the Police are involved in more minority admissions. These stark figures (53% of Africans vs 22% of whites are detained on admission) are a strong pointer that some form of discrimination is taking place for all ethnic minority groups, even though this has not been evidenced in lab studies of risk assessment (Lewis *et al.*, 1990). Other contributory factors may be language difficulties, and the low socio-economic status of some incoming migrant groups, including high rates of unemployment.

The profile of female patients was very different from that of male patients, although the balance of genders was even. That balance represents an overall change, as female admissions outnumbered males prior to 1981 (Prior and Hayes, 2001). Female patients in this study were more likely to be white and less likely to suffer from schizophrenia or be compulsorily detained.

The balance between male and female staff in psychiatric nursing appears to be remarkably unchanging. An early study showed that 32% of psychiatric nurses were male (John, 1961), compared to the 34% in this study. This figure matches that in a recent report (Ferguson *et al.*, 2004), which also shows that among new recruits to mental health nursing, the proportion of men is lower (27%). In this study younger age was associated with female gender, also suggesting that a larger proportion of female nurses are being trained. This could alter the future gender balance of the workforce, but only if attrition rates are the same for both genders. If so, mental health

nursing is set to become female to a greater degree, and gender concordance will decrease further.

Africans are the youngest and newest ethnic cohort in Mental Health Nursing. They are more likely to be male (compensating for white nurses being more likely to be female), and are more likely to be working in staff nurse grades. They need appropriate nurturing to ensure they flourish and succeed, becoming able to make their own distinctive contribution to mental health nursing and UK psychiatry. London needs to give special attention to the advancement of minority nurses, and monitor access to post basic courses, and higher level staff appointments in relation via equal opportunity procedures. Within the next ten years it should be expected that management be reflective of the workforce.

There was a strong association between ethnic minority status and IMD/SFS. It is well known that most of ethnic minority communities in the UK suffer from greater poverty, higher unemployment, and live in poorer quality housing (Office for National Statistics, 2002). Moreover, there are known associations between social class and schizophrenia, some of which is due to the drift of the mentally ill into poor inner city areas, and some of which seems to arise from a direct effect of urban living (Goldberg and Morrison, 1963;Eaton *et al.*, 2000). This does not appear to result in any further discrimination (i.e. poorer services for poorer people, (Hart, 1971), for although ethnic minority patients are more likely to be admitted to a ward with a worse physical environment, that ward will have a richer skill mix of nursing staff.

Limitations

The ethnic proportions of staff and patients we have reported are unlikely to be wholly representative. One third of the sample was from London, where the largest number of England's ethnic minority citizens live, and the rest of the sample were from the midlands and the north west, where there are significant and large Asian populations. Other parts of the country may have yielded different figures. Nevertheless, the underlying features we have presented are like to apply to a greater or lesser degree depending on local population, to the whole of the country.

Conclusions

Overall our data shows a slight tendency for minority staff to outnumber minority patients, although the modal value is just the other side, with the largest number of wards having a small excess of white staff over patients. If concordance is judged to be desirable, then nationally more men need to be recruited to psychiatric nursing careers, whereas in the north more Asian nurses need to be trained, and in London more white nurses trained. The precise position of each minority community is different. Our data show that to achieve overall concordance nationally, more White, Asian, Caribbean, and other ethnicity nurses need to be recruited and trained, whereas perhaps controversially, the number of African nurses recruited should be reduced.

There continues to be evidence that ethnic minority patients are subject to an excessive amount of legal coercion in mental health services, even controlling for other potential explanatory factors. Existing policy to address this issue should be

vigorously pursued (Department of Health, 2005), and includes cultural capability training and the employment of community development workers.

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Table 1. Staff demography

	n	%
Age in years		
Under 20	9	0.60
20 - 29	355	23.68
30 - 39	455	30.35
40 - 49	420	28.02
50 - 59	221	14.74
60 or over	39	2.60
Total	1499	100.00
Gender		
Male	509	34.07
Female	985	65.93
Total	1494	100.00
Ethnicity		
White	1009	67.72
Irish	51	3.42
Caribbean	77	5.17
African	210	14.09
South Asian	29	1.95
Other	114	7.65
Total	1490	100.00
Length of time in current post		
1 year or less	428	28.65
Between 1 and 3 years	483	32.33
Between 3 and 5 years	189	12.65
More than 5 years	394	26.37
Total	1494	100.00
Length of time working in psychiatry		
1 year or less	101	6.78
Between 1 and 3 years	234	15.70
Between 3 and 5 years	291	19.53
More than 5 years	864	57.99
Total	1490	100.00
Discipline/occupation?		
Nurse	997	66.64
Health Care Asst.	432	28.88
Psychiatrist	7	0.47
Occ. Therapist	6	0.40
Other	54	3.61
Total	1496	100.00
Nursing grade [Nurses only]		
A or B	388	29.09
C, D, or E	684	51.27
F	169	12.67
G	72	5.40
H	21	1.57
Total	1334	100.00

Table 2. Patient demography

	n	%
Age		
35 yrs or less	5334	55.21
36 yrs or more	4328	44.79
Total	9662	100.00
Gender		
Fenale	5103	50.94
Male	4915	49.06
Total	10018	100.00
Ethnicity		
White	6349	73.13
Irish	196	2.26
Caribbean	567	6.53
African	460	5.30
S. Asian	557	6.42
Other	553	6.37
Total	8682	100.00
Diagnosis		
Schizophrenia	2747	29.31
Other diagnosis	6626	70.69
Total	9373	100.00
Compulsorily detained		
yes	2569	26.92
no	6975	73.08
Total	9544	100.00
Admitted for risk of harm to self		
yes	5521	58.22
no	3962	41.78
Total	9483	100.00
Admitted for risk of harm to others		
yes	2405	27.26
no	6419	72.74
Total	8824	100.00

Table 3. Logistic regression with being detained under the MHA as the dependent variable

	Odds Ratio	Std. Err.	z	P>z	[95% Conf.	Intervals]
Irish vs white	1.59	0.36	2.05	0.041	1.02	2.47
Caribbean vs white	2.60	0.31	8.15	<0.001	2.07	3.27
African vs white	2.67	0.36	7.22	<0.001	2.04	3.49
Asian vs white	1.64	0.19	4.20	<0.001	1.30	2.06
Other vs white	1.73	0.21	4.50	<0.001	1.36	2.20
Male vs female	0.89	0.06	-1.81	0.070	0.78	1.01
Diagnosis schizophrenia vs other	1.87	0.12	9.36	<0.001	1.64	2.13
35 yrs or younger vs older	1.05	0.07	0.73	0.467	0.92	1.19
Risk of harm to self vs none	0.85	0.05	-2.60	0.009	0.75	0.96
Risk of harm to others vs none	3.48	0.23	18.63	<0.001	3.06	3.97

Table 4. Correlations between patient characteristics and features of the wards

	Index of multiple deprivation	Social fragmentation (z score)	Number of beds	Physical environment quality total	WTE nursing staff in post per bed	Proportion qualified/total nursing staff in post	Nursing vacancy rate
Proportion white	-0.264 **	-0.460 ***	0.233 **	0.284 **	0.047	-0.374 ***	-0.131
Proportion Irish	0.099	0.224 **	-0.136	-0.208 *	-0.114	0.193 *	0.068
Proportion Caribbean	0.231 **	0.415 ***	-0.168 *	-0.206 *	0.046	0.350 ***	0.031
Proportion African	0.175 *	0.364 ***	-0.272 **	-0.291 **	-0.043	0.353 ***	0.168
Proportion Asian	0.142	0.104	-0.020	-0.051	-0.018	0.067	0.042
Proportion other ethnicity	0.190 *	0.371 ***	-0.177 *	-0.209 *	-0.096	0.244 **	0.140
Proportion male	0.145	0.072	0.020	0.005	0.011	-0.002	-0.025
Proportion schizophrenia	0.321 ***	0.483 ***	-0.097	-0.135	-0.005	0.106	0.165
Proprotion under 35	0.186 *	0.177 *	-0.152	-0.035	0.063	0.048	-0.012
Proportion sectioned	0.410 ***	0.438 ***	-0.277 **	-0.100	0.159	0.156	0.017
Proportion risk of harm to self	-0.088	-0.139	0.015	0.047	0.093	-0.142	-0.022
Proportion risk of harm to others	0.356 ***	0.321 ***	-0.195 *	-0.111	0.077	0.147	0.089

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 5. Correlations between staff characteristics and features of the wards

	Index of multiple deprivation	Social fragmentation (z score)	Number of beds	Physical environment quality total	WTE nursing staff in post per bed	Proportion qualified/total nursing staff in post	Nursing vacancy rate
proportion staff white	0.021	-0.425 ***	0.189 *	0.303 ***	0.155	-0.437 ***	-0.181 *
proportion staff irish	-0.059	0.025	-0.104	-0.035	-0.031	0.034	0.108
proportion staff african	-0.047	0.381 ***	-0.171 *	-0.293 ***	-0.174 *	0.435 ***	0.178 *
proportion staff caribbean	0.068	0.227	-0.126	-0.038	0.133	0.195 *	-0.069
proportion staff asian	0.055	0.075	-0.065	-0.213 *	-0.087	0.029	0.080
proportion staff other	-0.020	0.252 *	-0.030	-0.123	-0.132	0.232 **	0.121
proportion staff male	0.116	0.195	-0.087	-0.243 **	0.081	0.130	-0.092
proportion staff 30 and over	0.013	0.075	-0.083	0.069	0.068	0.125	-0.048

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 6 Demographic concordance between patients and staff

	Whole sample			London			Non-London			Test of London/Non-London difference*		
	Mean	sd	Median	Mean	sd	Median	Mean	sd	Median	t	df	p
Age concordance	-0.23	0.21	-0.26	-0.33	0.24	-0.36	-0.18	0.18	-0.20	4.07	134	<0.001
Gender concordance	-0.15	0.24	-0.17	-0.04	0.26	-0.05	-0.20	0.22	-0.22	3.89	134	<0.001
Ethnic concordance 1 (simple absolute concordance)	0.19	0.17	0.13	0.31	0.17	0.32	0.13	0.13	0.10	6.68	134	<0.001
Ethnic concordance 2 (complex absolue concordance)	0.10	0.07	0.08	0.17	0.06	0.16	0.06	0.05	0.04	11.99	134	<0.001
Ethnic concordance 3 (simple directional concordance)	-0.09	0.23	-0.06	-0.29	0.19	-0.32	0.00	0.18	0.01	-8.62	134	<0.001
White concordance	-0.09	0.23	-0.06	-0.29	0.19	-0.32	0.00	0.18	0.01	-8.62	134	<0.001
Irish concordance	0.01	0.07	0.00	0.00	0.09	-0.02	0.02	0.05	0.00	-1.18	134	0.238
African concordance	0.12	0.19	0.04	0.33	0.21	0.34	0.02	0.07	0.00	9.28	47	<0.001
Caribbean concordance	-0.02	0.10	0.00	-0.05	0.14	-0.04	-0.01	0.08	0.00	-1.85	57	0.070
Asian concordance	-0.04	0.09	-0.02	-0.01	0.12	-0.02	-0.05	0.07	-0.02	1.95	57	0.056
Other ethnicity concordance	0.02	0.13	0.00	0.02	0.18	0.00	0.01	0.10	0.00	0.35	56	0.728

*Equal variances assumed unless Levene's test significant

References

Bebbington P., Brugha T., Meltzer H., Farrell M., Ceresa C., Jenkins R., & Lewis G. (2000) Psychiatric disorder and dysfunction in the UK National Survey of Psychiatric Morbidity. *Soc Psychiatry Psychiatr Epidemiol.* **35,** 191-197.

Bhui K., Stansfeld S., & Hull S. (2003) Ethnic variations in pathways to and use of specialist mental health services in the UK. Systematic review. *British Journal of Psychiatry* **182,** 105-116.

Blofeld J., Sallah D., Sashidharan S.P., Stone R., & Struthers J. Independent inquiry into the death of David Bennett. 2003. Cambridge, Norfolk, Suffolk and Cambridgeshire Strategic Health Authority.
Ref Type: Report

Bowers L., Whittington R., Nolan P., Parkin D., Curtis S., Bhui K., Hackney D., Allan T., Simpson A., & Flood C. (2007) *The City 128 Study of Observation and Outcomes on Acute Psychiatric Wards. Report to the NHS SDO Programme*. NHS SDO Programme, London.

Chen F., Fryer G., Phillips R., Wilson E., & Pathman D. (2005) Patients' beliefs about racism, preferences for physician race, and satisfaction with care. *Annals of Family Medicine* **3,** 138-143.

Commission for Racial Equality. A Guide to Ethnic Groups in Britain. http://www.cre.gov.uk/diversity/ethnicity/index.html . 2007. http://www.cre.gov.uk/diversity/ethnicity/index.html. 6-9-2007.
Ref Type: Electronic Citation

Congdon P. (1996) Suicide and Parasuicide in London: A Small-area Study. *Urban Studies* **33,** 137-158.

Cooper-Patrick L., Gallo J., Gonzales J., Vu H., Powe N., Nelson C., & Ford D. (1999) Race, gender, and partnership in the patient-physician relationship. *Journal of the American Medical Association* **282,** 583-589.

CVS Consultants & Migrant & Refugee Communities Forum (1999) *A Shattered World: The Mental Health Needs of Refugees and Newly Arrived Communities*. CVS Consultants, London.

Department of Health (2003) *Mental Health Services - Workforce Design and Development. Best Practice Guidance*. Department of Health, London.

Department of Health. Delivering race equality in mental health care. An action plan for reform inside and outside services. and The Government's response to the independent inquiry into the death of David Bennett . 2005. London, Department of Health.

Ref Type: Report

Eaton W., Mortenson P., & Frydenberg M. (2000) Obstetric factors, urbanization and psychosis. *Schizophrenia Research* **43,** 117-123.

Ferguson K, Owen S, Beswick S, & Baguley I (2004) *Time to Act. Choosing to Work in Mental Health: The Recruitment of Health and Social Care Professionals* . University of Lincoln, Centre for Clinical Academic Workforce Innovation.

Fryer P. (1984) *Staying Power: The History of Black People in Britain*. Pluto Press, Concord, MA.

Garcia J., Paterniti D., Romano P., & Kravitz R. (2003) Patient preferences for physician chracteristics in Uniersity-based primary care clinics. *Ethnicity and Disease* **13,** 259-267.

Gask K. (2006) Population review of 2004 and 2005:England and Wales. *Population Trends* **126,** 8-15.

Goldberg E.M. & Morrison S.L. (1963) Schizophrenia and Social Class. *British Journal of Psychiatry* **109:785-802**.

Gudjonsson G., Rabe-Hesketh S., & Wilson C. (2000) Violent incidents on a medium secure unit: the target of assault and the management of incidents. *Journal of Forensic Psychiatry* **11,** 105-118.

Hansen R.S. (2000) *Citizenship and Immigration in Post-War Britain: The Institutional Origins of a Multicultural Nation*. Oxford University Press, Oxford.

Hart J.T. (1971) The inverse care law. *Lancet* **297,** 405-412.

Healthcare Commission (2007) *Count Me In. Results of the 2006 National Census of Inpatients in Mental Health Hospitals and Facilities in England and Wales*.

John A. (1961) *A Study of the Psychiatric Nurse*. Churchill Livingstone, Edinburgh.

Johnson P. (1992) *The Offshore Islanders:A History of the English People*. Phoenix Paperback, London.

King M., Nazroo J., Weich S., McKenzie K., Bhui K., Karlsen S., Stansfeld S., Tyrer P., Blanchard M., Lloyd K., McManus S., Sproston K., & Erens B. (2005) Psychotic symptoms in the general population of England--a comparison of ethnic groups (The EMPIRIC study). *Soc Psychiatry Psychiatr Epidemiol.* **40,** 375-381.

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

Littlewood R. (2004) Ethnic Minorities and the Mental Health Act - patterns of explanation. *Bulletin of the Royal College of Psychiatrists* **10,** 306308.

Morgan C., Fearon P., Hutchinson G., McKenzie K., Lappin J., Abdul-Al R., Morgan K., Dazzan P., Boydell J., Harrison G., Craig T., Leff J., Jones P., & Murray R. (2006) Duration of untreated psychosis and ethnicity in the AESOP first-onset psychosis study. *Psychological Medicine* **36,** 239-247.

Napoles-Springer A., Santoyo J., Houston K., Perez-Stable E., & Stewart A. (2005) Patients' perceptions of cultural factors affecting the quality of their medical encounters. *Health Expectations* **8,** 4-17.

Noble M., Wright G., Dibben C., Smith G., McLennan D., Anttila C., Barnes H., Mokhtar C., Noble S., Avenell D., Gardner J., & Lloyd M. (2004) *The English Indices of Deprivation 2004*. OPDM Publications, West Yorkshire.

Office for National Statistics (1996) *Social Focus on Ethnic Minorities*. HMSO, London.

Office for National Statistics (2002) *Social Focus in Brief: Ethnicity 2002*. Office for National Statistics, London.

Prins H. (1993) *Report of the Committee of Inquiry into the Death in Broadmoor hospital og Orville Blackwood and a Review of the Deaths of Two Other Afro caribbean Patients, "Big, Black and Dangerous"*.

Prior P. & Hayes B. (2001) Changing places: man replace women in mental health beds in Britain. *Social policy and Administration* **35,** 397-410.

Robinson V. (1986) *Transients, Settlers and Refugees: Asians in Britain*. Clarendon Press, Oxford.

Saha S., Komoaromy M., Koepsell T., & Bindman A. (1999) Patient-physician racial concordance and the perceived quality and use of health care. *Archives of internal Medicine* **159,** 997-1004.

Temkin-Greener H., Gross D., Kunitz S., & Mukamel D. (2004) Measuring interdisciplinary team performance in a long-term care setting. *Medical Care* **42,** 472-481.

Winkelmann-Gleed A. (2006) *Migrant Nurses: Motivations, Integration and Contribution*. Radcliffe Publishing, Oxford.