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Psychotropic medication and ethnicity: an inpatient survey

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Summary. A survey of the catchment area psychiatric inpatient population of the Bethlem and Maudsley Hospitals showed that more black (Afro Caribbean) than non-black (white British) patients received anti-psychotic medication. This finding ceased to be significant after adjustment for diagnosis because a larger proportion of black than non black patients received a diagnosis of schizophrenia. However, after adjustment for diagnosis, black patients were significantly more likely to be receiving depot anti-psychotic medication, to be detained under a section and to have been involved in a violent incident during the present admission. There were no significant ethnic differences in total dose equivalents of anti-psychotic medication but doses of the depot form were significantly higher for black patients.

Access to services

Different ethnic groups experience different patterns of interaction with the psychiatric services before, during and after hospitalization. Rwegellera (1977, 1980) and Harrison et al. (1984, 1989) reported that black patients were significantly less likely than non black patients to have seen their general practitioner prior to psychiatric service contact. Rathwell (1984) argued that the needs of black patients are different from those of non black patients and general practitioners are slow to recognise this. Donovan (1986) and Francis (1990) have suggested that black patients are wary of the services and do not feel comfortable using them. McGovern and Cope (1991) found that black patients were more likely to live alone and be in contact with the police or prison services before admission. Rwegellera (1977) reported that black patients showed higher rates of disturbance than non-black patients prior to hospitalisation although this finding was not supported by Harrison et al. (1984) in Bristol and Lawson et al. (1984) in an American study. Nonetheless, black patients are more likely to be admitted to hospital under a section of the mental health act and much more likely than non-black patients to be admitted under section 136 (McGovern and Cope 1987; Fahy and Dunn 1990).

In patient management and diagnosis

Once patients have been hospitalised, differences persist in management and patient behaviour. Studies of inpatient populations have shown higher detention rates under sections of the mental health act for black patients (Fahy and Dunn 1990; Ineichen et al. 1984; McGovern and Cope 1987; Moodley and Thornicroft 1988; Moodley and Perkins 1991).

There has been extensive debate about the accuracy of diagnosis given to black patients in hospital settings. It has been suggested that psychiatrists over diagnose schizophrenia and cannabis psychosis in black patients (Abempimpe 1981; Littlewood and Lipsedge 1981, 1988). Against this, studies using standardised diagnostic instruments have found higher rates of schizophrenia among black patients (Harrison et al. 1988). It has been suggested that the application of instruments to cultural settings other than the ones for which they were developed requires careful consideration of potential sources of bias in the construction of the instruments and the categories and concepts underlying them (Kleinman 1987). Other writers see the increased diagnosis of schizophrenia in black patients as an expression of institutional racism (Fernando 1988).

Flaherty and Meagher (1980) in the USA, found that black patients admitted to an American inpatient facility with a diagnosis of schizophrenia were more likely to receive "as required" medication than non black patients. Cole and Pilisuk (1976), also reported that black patients were more likely to receive physical treatments and less likely to receive psychotherapy supporting the earlier similar findings of Thomas and Sillen (1975). Chen et al. (1991) studied some aspects of the management of black patients and non-black controls before and during their first admission for schizophrenia. With regard to medica-

tion, Chen et al. found that black patients were more likely to receive depot preparations early in the course of their admission. No consistent differences were reported in the doses of medication given to black compared to non black patients, although Chen et al. found that a small subgroup of afro-caribbean patients received higher peak doses during their admission but this finding did not achieve statistical significance. Overall (1969) studied extrinsic factors influencing response to psychotropic drugs in 372 patients in VA hospitals and found initial severity of illness, clinical syndrome, marital status, and ethnicity to be significant factors. He found that black patients improved on symptom BPRS and behaviourial measures more than non black patients. Noble and Rodgers (1989) report that black inpatients were involved in more violent incidents than non black inpatients in a London based retrospective study.

Aftercare

After discharge, there is evidence that black patients are less likely to remain in contact with services (Littlewood and Cross 1980; Harrison et al. 1989). One solution to higher drop out rates among black patients has been to establish projects aimed specifically at meeting their needs (Moodley 1988; Francis 1990). Littlewood and Cross (1980) found that black psychiatric out patients appeared more likely to receive anti-psychotic medication, particularly depot medication, than non black patients. A higher prevalence of depot antipsychotic medication among west Indian patients was also reported by Glover and Malcom (1988).

Aims

The present study concerns the inpatient management of black and non-black patients with particular emphasis on the use of medication. A cross-sectional survey of psychotropic prescribing to a catchment area inpatient population was carried out in order to discover factors associated with the decision to medicate patients and specifically whether ethnicity was an independent variable associated with the type and dose of medication prescribed to patients.

Method

The population

This survey was carried out on the catchment area adult inpatient population (ages 16 to 65 years) of the Bethlem and Maudsley Hospitals which provide psychiatric services to the Southern half of the London Borough of Southwark, an inner city area with a population of 147 000 by 1989 estimates, 23.6% of whom were afro-caribbean and 12.6% of whom were respectively Turkish Cypriot, Greek Cypriot, Indian, Bangladeshi, Pakistani, and other Asian, giving a total of 36.2% from ethnic minorities (OPCS 1981, London Borough of Southwark 1989).

Data collection

A census day was chosen and all information was collected either on that day or within five working days. For each patient, data were collected from case notes, prescription cards and interviews with primary nurses on age, sex, ethnicity, area of residence, height, weight, date of admission, lengthe of stay, clinical diagnosis, mental health act status, previous admissions, duration of illness from first service contact, forensic history. Details were recorded of the type, dose, route and frequency of administration of all psychotropic medication given to the patient in the preceding 24 hours and of current depot medication. To facilitate comparison of differing antipsychotic medications, dosages were converted to chlorpromazine dose equivalents in mg/chlorpromazine/day (Davis 1974, 1976; Carr and Lader 1978). Data on episodes of violence were derived from the patients' notes and from a centrally held violent incidents register as outlined by Noble and Rodgers (1989). In addition, nursing staff were asked whether, in their opinion a given patient constituted a 'violence risk'. Episodes of self harm and absconding were also recorded. An ICD-9 diagnosis was made on the basis of careful examination of the case notes.

Statistical analyses

Analyses of two way contingency tables were performed using chi square tests with Yate's correction factor, Wilcoxon's rank sum test was used for the comparison of variable that were not normally distributed using the SAS statistical package. Odds ratios together with their 95% confidence intervals and tests for heterogeneity were calculated with the EGRET statistical package to measure the strength of the association between ethnicity and treatment variables. The odds ratios were adjusted for confounding variables using logistic regression.

Results

The sample

The sample comprised 145 patients, adequate information was available on 138 of whom 101 were non black and 37 black. There were no statistically significant differences between black and non black for age, sex, duration of index admission, the length of time since first service contact or the number of admissions. The proportion of black patients among the in patient population was not significantly different from the percentage in the general population of the catchment area.

Diagnosis

Although black patients were not over represented among the inpatient population, they were significantly more likely to have a clinical ICD9 diagnosis which fell within the psychoses (ICD291-299) (Table 1). 23 (62%) of this group had a clinical ICD-9 diagnosis of schizophrenia compared to 36 (36%) non black patients (Yates χ^2 7.781

Table 1. Primary clinical diagnosis and ethnicity among a sample of 138 catchment area psychiatric in-patients

Clinical ICD-9 diagnosis	Black patients $n = 37$	White patients $n = 101$	χ^2	P
Schizophrenia ICD 295-295.9	23 (62%)	36 (36%)	7.781	0.005
Manic depressive psychosis (296-296.9)	9 (24%)	22 (22%)	0.169	ns
Other psychoses	1 (2.7%)[a]	10 (9.9%)[b]	(Fishers)	ns
All psychoses	33 (89.2%)	68 (67.3%)	5.529	0.019
Neuroses ICD 300-300.9	0	9	(Fishers)	ns
Other non-psychotic disorders	2 (5.4%)[c]	13 (12.9%)[d]	(Fishers)	ns
Other/not known/ not made	0	9		

[a] 292 drug induced psychosis = 1;
[b] 291 alcoholic psychosis = 4, 297 paranoid state = 3, 298 other non organic psychosis = 3;
[c] 301 personality disorder = 1, 304 drug dependence = 1;
[d] 301 personality disorder = 4, 303 alcohol dependence = 2, 304 drug dependence = 3, 307.1 eating disorder = 2, 304 adjustment reaction = 2

Table 2. Types of medication prescribed to in patient sample comparing black and non black patients

Types of medication	Black patients $n = 37$	White patients $n = 101$	χ^2 $df = 1$	P
Anti-psychotic by any route	32 (86.5%)	61 (60.45%)	8.388	0.007
Depot anti-psychotic	21 (56.8%)	25 (24.8%)	12.482	< 0.001
Oral anti-psychotic	26 (70.3%)	58 (57.4%)	1.876	ns
2 oral anti-psychotics	8 (21.6%)	19 (18.8%)	0.136	ns
Oral and depot anti-psychotic	15 (40.5%)	21 (20.8%)	5.477	0.019
Anticholinergic medication	21 (56.8%)	29 (28.7%)	9.218	0.002
Anxiolytic/ sedative	7 (18.9%)	18 (17.8%)	0.022	ns

$df = 1$, $P = 0.005$. In fact, there were no black inpatients with a neurotic illness (ICD9 300) compared to 9 (9%) non black patients.

Medication

Black patients were more likely than non black patients to be receiving anti-psychotic medication (Table 2), 32 (86.5%) black patients compared with 61 (60.4%) non black patients (Yates $\chi^2 = 7.243$, $df = 1$, $P = 0.007$). Doses of medication given were converted into the equivalent in oral chlorpromazine/24 hours. Among patients receiving anti-psychotic medication, there were no significant differences in the total amounts of medication given to black or non black patients (Table 3).

Black patients were significantly more likely to be receiving a depot preparation i.e. 21 (56.8%) black patients compared to 25 (24.8%) non black patients ($\chi^2 = 12.482$, $df = 1$, $P < 0.001$) (Table 2). Among patients receiving depot antipsychotic medication, black patients received significantly higher doses than non black patients although this finding should be treated with caution because the range is large (Table 3).

More black than non black patients received anticholinergic medication; 21 (56.8%) black patients and 29 (28.7%) non black patients giving ($\chi^2 = 9.218$, $df = 1$, $P = 0.002$) (Table 2). There were no significant gender differences in types of medication prescribed.

To analyze the relationship of ethnicity to the other factors associated with the decision to place a patient on antipsychotic medication odds ratios were calculated using psychotropic medication as the response variable. Table 4 gives the odds ratios for the effect of ethnicity on psychotropic medication before and after adjustment for age, sex and diagnosis. Ethnicity ceased to be a significant factor at the 5% level in determining whether or not a patient was placed on medication when adjusted for diagnosis as a confounding variable.

As significantly more black patients were receiving depot medication than non black odds ratios were calculated using depot medication as the response variable (Table 5). After adjustment for age, sex and diagnosis there remained an association between ethnicity and depot medication which was significant at the 5% level. This association ceased to be significant at the 5% level if adjusted further for violent behaviour and detention under the mental health act.

Detention and the mental health act

Significantly more black patients were detained under the mental health act than non black patients. 25 (67.6%) black patients were detained and 30 (29.7%) non black patients giving $\chi^2 = 16.197$, $df = 1$, $P < 0.0001$. Odds ratios were calculated using detention under the mental health act as the response variable (Table 6). There remained a significant association between ethnicity and compulsory detention after adjustment for gender, age, diagnosis and a history of violence either in this or previous admissions.

Table 3. Relationship between antipsychotic dosage, route of administration and ethnicity comparing black and non black patients

Route	Anti psychotic dosage in mg CPZ equivalent/day				Wilcoxon Rank sum test	
	Black patients $n = 32$		White patients $n = 61$			
	Median	Inter quartile range	Median	Inter quartile range	Z	$P > \|Z\|$
Oral	250	100–725	200	100–500	0.30	0.76
Depot	180	100–670	60	25–240	2.05	0.04
Total	470	200–1352	350	100–700	1.16	0.25

Table 4. Odds Ratios for the association between ethnicity and antipsychotic medication

	Unadjusted ethnicity	Adjusted for ethnicity, age, and sex	Adjusted for ethnicity, age, sex, and diagnosis	Adjusted for ethnicity, age, sex, diagnosis, and compulsory detention
Odds ratio	3.71	3.05	2.63	1.87
95% confidence interval	1.46–9.41	1.23–7.96	0.93–7.45	0.69–5.82
P	0.002	0.015	0.070	0.308

Table 5. Odds ratios for the association between ethnicity and DEPOT antipsychotic medication

	Unadjusted ethnicity	Adjusted for ethnicity, age, and sex	Adjusted for ethnicity, age, sex, and diagnosis	Adjusted for ethnicity, age, sex, diagnosis, and compulsory detention
Odds ratio	2.0	1.82	1.79	1.49
95% confidence interval	1.34–2.97	1.19–2.91	1.18–2.72	0.94–2.37
P	< 0.001	0.004	0.006	0.089

Disturbed behaviour

Black patients were not considered by staff to pose a greater on-going violence risk than non black patients even though black patients were more likely to have been involved in a violent incident during the index admission ($\chi^2 = 12.285$, $df = 1$, $P < 0.0001$) and to have been involved in a violent incident during previous admissions ($\chi^2 = 10.595$, $df = 1$, $P = 0.001$). Odds ratios were calculated with recorded violence during this admission as the response variable (Table 7). There remained a significant association between ethnicity and violence after adjustment for gender, age, and diagnosis. Although black patients were more likely than non black patients to have been admitted to a locked ward in the past ($\chi^2 = 8.411$, $df = 1$, $P = 0.004$), or an interim secure unit in the past ($\chi^2 = 7.486$, $df = 1$, $P = 0.006$), they were no more likely to have been admitted to a locked ward during the present admission.

Discussion

Sources of error

The number of patients in this study was similar to other studies (Glover and Malcom 1988; Harrison et al. 1989; Chen et al. 1991; McGovern and Cope 1991) although the size of the non-black group was larger than in the latter two retrospective studies. Nonetheless, sample sizes are small so trends in the data require cautious interpretation. The present study differs from Chen et al. (1991), McGovern and Cope (1991) in that it was a cross-sectional survey and not restricted to first admissions or patients with a diagnosis of schizophrenia.Sociodemographic data were collected from case notes and there is a possibility of recording bias. Medication data were recorded from drug charts which at the time of study required two nurses' to countersign for medication. Diagnostic data were based on the case note diagnosis. The majority of diagnoses were made at consultant ward rounds. For patients who had just been admitted, the diagnosis was made by a junior psychiatrist. Where the patient had more than one diagnosis the primary diagnosis was used. It is the practice at this hospital to make diagnoses according to ICD9 categories. Diagnoses made in this way, even within one centre, will be less reliable than those made with standard research instruments (Kendell 1975). However, our decision to choose clinical diagnoses over research diagnoses was based on the assumption that clinical management in a hospital setting is guided and informed by the clinical diagnosis. This study has not therefore excluded the possibility of misdiagnosis. From most patients' point of view it is the clinical diagnosis which influences and informs how they are treated. Data on violence risk is impressionistic. The decision to place a patient in this category is made by medical and nursing staff at ward level. As such it gives a useful indicator of staff perception of patients. As will be discussed later, there was a discrepancy between attributed violence risk and recorded actual violent incidents. Unlike Noble and Rodger (1988), for the purposes of analysis the present study did not sub classify types of violent incident. So it is not possible to differentiate between assaults not resulting in any detectable injury and those resulting in physical injuries. Incidents are entered in a central register so reporting bias cannot be excluded.

Diagnosis

Whilst black patients were not over represented in the in patient population, they formed a much more homogenous group in terms of their primary diagnosis than the non-black patients. Why there should be no black in patients with a diagnosis of a neurotic illness is a puzzling issue which may be related to patterns of morbidity in the black community, help seeking behaviour, service interaction or possibly diagnostic practices (Littlewood and Lipsedge 1988; Gillam 1990). Some workers have reported differences in pathways to psychiatric services for

Table 6. Odds ratios for the association between ethnicity and compulsory detention under the mental health act

	Ethnicity unadjusted	Adjusted for ethnicity, age, and sex	Adjusted for ethnicity, age, sex, diagnosis, and violence[a]
Odds ratio	2.22	2.18	1.97
95% confidence interval	1.48–3.33	1.43–3.23	1.30–3.0
P	< 0.001	0.001	0.002

[a] See methodology for explanation of this term

Table 7. Odds ratios for the association between ethnicity and inpatient violence

	Ethnicity unadjusted	Adjusted for ethnicity, age, and sex	Adjusted for ethnicity, age, sex, and diagnosis	Adjusted for ethnicity, age, sex, diagnosis, and compulsory detention
Odds ratio	2.02	1.95	1.81	1.40
95% confidence intervals	1.35–3.04	1.28–2.98	1.18–2.78	0.85–2.28
P	< 0.001	0.002	0.006	0.184

black as compared to non-black patients. Littlewood and Lipsedge (1988) and Moodley and Perkins (1990) emphasise differences in service access to black as compared to non black patients. There is some quantitative data to support this Rwegellera (1977), McGovern and Cope (1987) and Harrison 1984 and 1989 have explored some aspects of access to service. It may be that general practitioners are not recognising non psychotic disorders in black patients, or those patients may not be presenting their symptoms to GPs or are not treated in inpatient settings.

Medication

Without adjusting for diagnosis we found that black patients were much more likely to be receiving anti-psychotic medication than non black patients. Chen et al. (1991) matched patients for age, sex and diagnosis and found no differences between the numbers of black and non black patients on antipsychotic medication. When our data are adjusted for age, sex and diagnosis as confounding variables (Table 3), the findings supported those of Chen (1991): the association between ethnicity and anti-psychotic mediation disappeared. This effect was attributable to diagnosis rather than age or sex with management following on from diagnosis.

The finding that black patients were more likely than non-black patients to receive depot anti-psychotic preparations has been reported from studies performed on out-patient populations (Littlewood and Cross 1980; Glover and Malcom 1988). Looking at in-patients, Chen et al. (1991) found that first admission black patients with a diagnosis of schizophrenia were more likely to be placed on depot medication sooner than non black patients and more black patients were placed on depot medication during their admission but these findings failed to achieve statistical significance. The present authors found that, even with adjustment for age, sex and diagnosis as confounding factors, black patients were significantly more likely to receive depot medication (Table 5).

In addition black patients received higher dose equivalents of depot medication than non-black patients. Total dose equivalents given to black and non black patients were not significantly different suggesting perhaps that the present study lacked sufficient power to detect a difference if one existed as the total median dose is higher for black patients. Alternatively it may be that black and non black patients receive similar amounts of anti-psychotic medication but black patients receive a larger proportion of their medication in depot form.

One commonly cited reason for prescribing depot antipsychotic preparations is the desire to improve compliance. It could be that the preference for depot medication among black patients reflects either a real or a perceived difference between ethnic groups with regard to compliance with oral medication. There is some evidence from other studies to suggest that after discharge black patients remain in contact with the services for shorter periods than non black patients. For example Harrison et al. 1989 showed that black patients tended to have shorter out patient follow up periods than non black patients and Littlewood and Cross (1980) reported that black patients were more likely than non black patients to see junior members of staff for their follow up out patient appointments. They hypothesised that because these junior staff change every few months, it was difficult for patients to build up a relationship with continually changing staff who had less experience in managing their medication. Analyzing data on patients referred to a psychiatric day hospital, Rowlands and Perkins (personal communication) report that a significantly higher proportion of black patients than non black patients failed to engage in treatment programmes.

Detention

The present study confirmed the finding that black patients were more likely to be compulsorily detained than non black patients. However, there remained a significant association between ethnicity and compulsory detention, even after adjusting for disturbed behaviour (Table 4). This suggests that there may be other reasons why black patients were more likely to be compulsorily detained than non black patients.

Harrison et al. 1989 reported that black patients showed greater delays in seeking treatment often having experienced symptoms for greater than 6 months before coming to treatment.

One consequence of a delay between becoming ill and getting psychiatric help might be that the individuals are more disturbed. When a patient is distrubed and does not wish to remain in hospital or comply with treatment staff may consider detaining the patient under a section of the mental health act.

Disturbed behaviour

The present study suggested an association between ethnicity and in patient violence although this should be interpreted with caution for a number of reasons. Harrison et al. (1984) who studied black and non black compulsory psychiatric admissions in Bristol, reported that whilst black inner city residents of Bristol were more likely to exhibit "disturbed behaviour" in as much as "they most commonly attracted the attention of services via a public disturbance" these patients were "actually *less* (their italics) violent" than suburban non blacks and "no more likely to

be involved in violence on the ward". A confusing finding of the present study was that nursing staff told the researchers that they considered black patients to be less likely to be involved in violent incidents during their admission than non black patients. The same staff were responsible for recording the data on violent incidents from which our figure for actual episodes of violent behaviour were derived. Lewis et al. (1990) used case vignettes to investigate psychiatrists attitudes to black patients and found that psychiatrists reported that they perceived the black patient described in their vignette as likely to have a shorter illness, be less likely to need neuroleptic but have greater potential for violence than non black patients. These findings are almost diametrically opposed to the practice we found in our hospital: patients were more likely to get neuroleptic, and were thought of as posing less of a violence risk although in fact they did commit more of the violent incidents. These contradictory findings as Lewis et al. pointed out could be because respondents answered research questions in the way that differed subtly from their actual practice. There appeared to be a discrepancy between what people told researchers they did or thought and their actual clinical practice. Such findings may reflect ethnic differences in the natural history and severity of mental illness, they may be methodological artifacts or they may reflect something more subtle occurring in the interaction between black people and the mental health services.

Institutional racism?

Several authors make reference to what can best be described as "subtle institutional stereotyping" of black patients (Adebimpe 1981; Fernando 1988). The main thrust of the argument in favour of such stereotyping is that predominantly non black institutions discriminate against black patients in a variety of ways depending upon context and setting (Cole and Pilisuk 1976; Flaherty and Meagher 1980). Kushnick (1988) suggests that the experience of black health care consumers in shaped by racism in terms of how they are treated for both physical and mental health problems. Most of the literature on institutional racism emphasises the way non black institutions discriminate against blacks (Fernando 1988), but some authors have pointed out that black patients are deeply suspicious of the health services and what they have to offer them (Donovan 1986).

Conclusions

In summary, it would appear that black in-patients were more likely than non-black patients to receive depot medication, to be compulsorily detained, and to be involved in a violent incident although staff said they perceived them as having less potential for violence. Black patients also received higher does of depot medication than non-black patients. It is possible that there is a relationship for psychiatric in-patients between compulsory detention, disturbed behaviour, depot medication and being black which is not satisfactorily explained by diagnosis alone. It has been suggested (Lloyd and Moodley 1990) that the management of black in-patients differs from that of non black in-patients in that the former group receive more coercive means of treatment such as depot anti-psychotics and compulsory detention. It may be that treatment follows on from disturbed behaviour. It may be that the there is resistance to help seeking shaped perhaps by previous experiences and resulting in later presentation, or services may not be available in a form people find readily accessible (Francis 1989), resulting in a delay in care being offered. If people are being treated more coercively then their violence may be an response to this. More work is needed to explore further the relationship between compulsory detention, inpatient violence and depot medication, to explore black patients' views of the service and the relationship between the attitudes and clinical practices of non-black health care professionals in a multi-cultural society.

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