

Ethnic variations in pathways to and use of specialist mental health services in the UK

Systematic review

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Background Inequalities of service use across ethnic groups are important to policy makers, service providers and service users.

Aims To identify ethnic variations in pathways to specialist mental health care, continuity of contact, voluntary and compulsory psychiatric in-patient admissions; to assess the methodological strength of the findings.

Method A systematic review of all quantitative studies comparing use of mental health services by more than one ethnic group in the UK. Narrative analysis supplemented by meta-analysis, where appropriate.

Results Most studies compared Black and White patients, finding higher rates of in-patient admission among Black patients. The pooled odds ratio for compulsory admission, Black patients compared with White patients, was 4.31 (95% CI 3.33–5.58). Black patients had more complex pathways to specialist care, with some evidence of ethnic variations in primary care assessments.

Conclusions There is strong evidence of variation between ethnic groups for voluntary and compulsory admissions, and some evidence of variation in pathways to specialist care.

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The Human Rights Act 1998 and the Race Relations (Amendment) Act 2000 place responsibilities on service providers to eradicate discriminatory procedures and practice. Inequitable variation in use of health care services between ethnic groups concerns policy makers, patients and clinicians (Acheson, 1998; Department of Health, 2000). A previous review reported that mental health services are unattractive to some ethnic groups, who complain of more coercive treatments and adverse experiences (Cochrane & Sashidharan, 1996). Although this perception has become widespread, studies that compare access and use of mental health services by different ethnic groups have not been reviewed systematically. It is not known how consistently the findings suggest poorer access for minority ethnic groups, or how these findings relate to study design and methodological quality (Cochrane & Sashidharan, 1996). We undertook a review of the published studies on ethnic variations in use of primary care or mental health services in the UK.

METHOD

Our review focused on specific questions: is there variation between ethnic groups in (a) pathways to specialist mental health care; (b) continuing contact with mental health services; (c) use of in-patient services; and (d) compulsory admissions. We included published papers that compared access to, or use of, primary or secondary mental health care in the UK by at least two ethnic groups with psychotic and non-psychotic mental disorders in primary and secondary care (see Appendix). We excluded specialist services for children, adolescents and older people, as well as forensic services and services for psychosexual disorders or substance misuse.

The following bibliographic databases were searched: ASSIA, CINAHL, the Cochrane Trials Register, EMBASE, HealthStar, Medline, PsycLIT, Science Citation Index and SIGLE. The search was restricted to studies published in English between January 1983 and October 2000 inclusive. We identified titles and abstracts of papers that potentially fulfilled our inclusion criteria. The grouped search terms included: (a) GREAT BRITAIN, HEALTH SERVICES, INDIGENOUS ETHNIC GROUP; (b) HOSPITALS, PSYCHIATRIC, MENTAL HEALTH SERVICES, PSYCHIATRY, MENTAL DISORDERS, PSYCHOTROPIC DRUGS; (c) ETHNIC or MULTI-ETHNIC, UK or BRITAIN or LONDON, MENTAL or PSYCHIATRY or PSYCHOTROPIC. In databases where MESH terms were available they were exploded and combined. Searches were adapted for the different databases and performed independently by two reviewers. These searches were supplemented by personal bibliographies of the investigators, forward citation tracking using the Science Citation Index and Social Science Citation Index databases and by references in retrieved articles. We sent a list of all included studies to three external experts, asking them to identify any other relevant studies.

Abstracts, if available, or full papers were assessed independently by two reviewers. All potentially relevant papers were then assessed against inclusion and exclusion criteria. Disagreement was resolved by a third reviewer. Data were extracted independently by two reviewers. Discrepancies were resolved by discussion or by a third reviewer. For studies reporting pathways to specialist mental health care, continuing contact with mental health services and use of in-patient services, we conducted a narrative review because differences in the measurement and reporting of outcomes made combination of point estimates inappropriate. The narrative analysis involved comparison of tabulated data and appraisal of methodological quality (see below). For the review of variation in compulsory admissions to in-patient facilities, in addition to a narrative review, we performed a meta-analysis to quantify variation between ethnic groups in compulsory admission to in-patient facilities. We have expressed the main results as combined odds ratios with the random effects method after performing tests for

heterogeneity. We combined data on the proportions of White and Black patients who were compulsorily admitted in the primary studies. We examined publication bias and related biases in a funnel plot and carried out a test of funnel plot asymmetry. All analyses were performed with StatsDirect (<http://www.statsdirect.com/>).

Two reviewers independently assessed the methodological quality of each published study, with criteria adapted from Raine's review of gender differences in health service use (Table 1; Raine, 2000). We assessed the quality of published studies in four domains: sample source and size; method of ethnic group classification; adjustment for disease and confounding variables, including socio-economic status; and whether ethnic groups were combined appropriately in the analysis. Each of these was equally important in the allocation of quality score. Papers varied in their classification of ethnic groups and these were often aggregated into broad categories. In our analysis we have used the most commonly reported aggregated categories, comparing 'Black' and 'South Asian' groups with 'White' participants. We summarised the results of the papers

and examined whether quality scores, geographical location of the research, the composition of the ethnic groups and study design could explain any heterogeneity of findings.

RESULTS

Primary studies identified and quality scores

A total of 545 potentially relevant titles and abstracts were identified. Sixty-seven papers were scrutinised. One duplicate publication was excluded, leaving 38 papers that met our criteria (see Appendix). One additional paper that was identified by an external reviewer did not meet our inclusion criteria. Details of each paper, including classification of ethnic groups, demographic characteristics, study design and quality ratings are summarised in Table 2 (the full review tables can be seen on the Institute of Community Health Sciences Queen Mary website at <http://www.ichs.qmul.ac.uk/transcultural/TMS-Pub1.htm>). Quality scores ranged from 0 to 11 and were summarised into three categories: low quality (0–3); medium quality (4–7); and high quality (8–11). There were

five high-quality and 23 medium-quality studies. The total quality score was most highly correlated with adjustment for confounders ($r=0.81$) and methods for ethnic group classification ($r=0.6$). The more recently published papers achieved higher quality scores ($r=0.57$, $P=0.0002$).

Methodological findings

Most papers reported observational studies in health service settings using a cross-sectional design, without making a distinction between incident and prevalent cases (see Table 2). A total of 34 studies included information from medical records, 15 from direct interview and 10 used questionnaires. Clearly the majority of studies are therefore subject to recall bias and information bias, and where samples were recruited from in-patient and out-patient services, selection bias is likely to be important. Only three studies were of a prospective cohort design in which biased assessment of risk factors is minimised. As far as could be judged, potential biases due to study design did not explain heterogeneity. Thirty-five papers included Black participants; eight did not distinguish

Table 1 Scoring system for methodological quality of paper

Sample source and size	Score	Adjustment for confounding variables	Score	Ethnicity categorisation			
				Quality	Score	Use in the analysis	Score
Routine data (e.g. health authority, GP list data)	0	None	0	Third-party reports (e.g. ward staff categorisation, name-based methods, skin colour methods)	0	Inappropriate ethnic groups combined for major study outcomes (e.g. Blacks v. all others) or poor method of collecting ethnicity data	0
Project-specific data: <30 cases in ethnic groups for major outcomes	1	Age and/or gender	1	Self-reported ethnicity or use of census categories	1	Lumping of groups: reasonable combinations of groups collected by census/self-report method	1
Project-specific data: >30 cases in ethnic groups for major outcomes	2	Diagnosis or disease severity (give 1 point if this sample is selected by diagnosis)	1			All analysis done on ethnic groups without amalgamation, and self-report/census categories for categorisation	2
Project-specific data: total sample size > 500	3	Comorbidity and risk factors for outcome of interest ¹	1–3				
Maximum possible ²	3		5		1		2

1. Risk factors included socio-economic factors (deprivation score, employment, household size, marital status); comorbidity included drug and alcohol use, coexisting psychiatric conditions, violence to others.

2. Maximum possible score for all items=11; low quality 0–3; moderate quality 4–7; high quality 8–11.

Table 2 Characteristics of studies included in review (ethnic classifications and diagnoses are those used in the original studies)

Author (ethnic definition)	Ethnic groups reported, n (%)	Actual sample size, n (% response rate)	Diagnoses, n (%) ²	Sample source	Data source	Design and follow-up	Other variables in analysis	Quality
Bebbington <i>et al.</i> , 1994 (D)	Black Caribbean 71 White 305	376	Psychosis 195 Affective disorder 140 Other 41	IP	Probably MR	CS, 1-day census and admission over subsequent 91 days	Age, gender, informal or formal admission, challenging behaviour, emergency or not sections	6
Bhugra <i>et al.</i> , 1999 (D)	Asian 24 White 38	62 (100)	Schizophrenia	IP, OP, GP	MR, Int			5
Bindman <i>et al.</i> , 2000 (B)	White 49 Black Caribbean 34 Black African 11 Asian 3	97 (74)	SMI (all together)	Community sample of prevalent cases	MR, Int	CS, collected prospectively	Living alone, admission to hospital	6
Birchwood <i>et al.</i> , 1992 (D)	Indian 30 African-Caribbean 50 White English 74 Irish 5 Other 10	101 (73)	Schizophrenia 62 Psychosis NOS 30	CMHT, IP	MR; contact with CMHT	CP, 12-month historical cohort	Age, gender, SES	3
Burnett <i>et al.</i> , 1999 (C)	African-Caribbean 38 White 38 Asian 24	100	Schizophrenia 100	IP, OP, GP, Pris, CMHT	MR, Quest, Int	2-year prospective data collection but a CS pathways study	Age, gender, SES	7
Callan, 1996 (A)	African-Caribbean 183 White 626	809	Schizophrenia 809	IP	MR	20-year historical cohort using Camberwell Register Prospective CP, matched case-control	Age, gender, SES	7
Castle <i>et al.</i> , 1994 (A+D)	African-Caribbean, M: 24, F: 26 White British, M: 24, F: 17 White 79 African-Caribbean 78 Other UK, Eire, West Indies, Africa, Asia, Other	134 (100) 484 (90)	Schizophrenia Paraphrenia ONPsych	IP, OP, CMHT	MR, Case register	FCPsych 19-year historical cohort	Age, gender, SES	4
Cole <i>et al.</i> , 1995 (B)	White 39 Black 38 Asian 16 & other	93 (88)	Schizophrenia 58 Other 35	IP	Quest, Int	Retrospective CS	Age, gender, unemployment	8

Table 2 (continued)

Author (ethnic definition ¹)	Ethnic groups reported, n (%)	Actual sample size, n (% response rate)	Diagnoses, n (%) ²	Sample source	Data source	Design and follow-up	Other variables in analysis	Quality
Commander et al, 1997b (B)	Asian 1516 Black 3068 White 1195	GenPop 433 (28.9) GP 834 (74) OP psychiatric services 2451 IP specialist (including For) 834	Schizophrenia 38.5/48.7 ³ BAD 7.7/12.7 ³ Depression 12.3/11.8 ³ Neurosis 18.4/6.9 ³ Drug misuse 4.5/6.3 ³ None 11.8/4.9 ³ Other 6.8/8.7 ³	IP, OP, CMHT, GP, GenPop, For, Pris	MR, Quest, Int	CS, 6-months prospective admissions	Age, gender, SES	5
Commander et al, 1997c (B)	As above	As above	As above	As above	As above	As above	Age, gender	5
Commander et al, 1999 (B)	Asian 40 Black 40 White 40	120 (100)	NAPsych (all)	IP	Int	Retrospective, CP at admission (120) and discharge (120)		5
Crowley & Simmons, 1992 (D)	African-Caribbean/ Asian 77 White 75	152 (100%)	Psychosis 86 Organic 7 Mania 10 Neurosis 39 Personality disorder 7	IP	MR	CS, Age- and gender-matched case-control	Age, gender, SES	2
Davies et al, 1996 (A+B)	Black African 29 Black Caribbean 115 Black other 15 White 254	213 (93)	Schizophrenia 238 APsych 13 Other psychosis 188 Total psychosis 439	IP, OP, GP, CMHT	MR	CS, all prevalent cases of psychosis in a sector, retrospective	Age, number of admissions living alone	9
Dunn & Fahy, 1990 (D)	White 165 Black 88 Asian 7 Uncertain 8	268 (100)	Schizophrenia 88 Hypomania 52 Depression 11 Drug-induced psychosis 24 Personality disorder 22	IP	MR, Quest	CP	Age, gender	3
Falkowski et al, 1990 (D)	African-Caribbean 26 African 8 UK/Irish 49 Other European 10 Asian 6 Other 1	100	Schizophrenia 45 BAD 17 PPsych 9 Personality disorder 8 Neurosis 21	IP who abscond	MR, CS	CS, retrospective		2

Table 2 (continued)

Author (ethnic definition ¹)	Ethnic groups reported, n (%)	Actual sample size, n (% response rate)	Diagnoses, n (%) ²	Sample source	Data source	Design and follow-up	Other variables in analysis	Quality
Flannigan <i>et al.</i> , 1994 (D)	White (66.4/76.8) ⁴ Black Caribbean (22.9/15.8) ⁴ Other (10.8/7.4) ⁴	CS 147 Prospective 266	Psychosis	IP	MR	CP	Age, gender, SES	3
Glover <i>et al.</i> , 1989 (A)	Jamaica Barbados Trinidad/Tobago	2466 (73.9)	All psychiatric, schizophrenia, mania, depression	IP	RD	Historical cohort using Mental Health Enquiry data over 3 years (1982–1985)	Gender	4
Goater <i>et al.</i> , 1999 (B+C)	White 39 Black 38 Asian 11 Other 5 Asian 86 White 86	93 (73 at year 1, 71 at year 5)	Schizophrenia 35 NAPsych 22 APsych 22	IP, OP, CMHT, GP, AE, For, Pris	MR, Quest, Int	Prospective incidence cases	Age, gender, SES	7
Gupta, 1991 (A)	Asian 86 White 86	172	Psychosis	IP, CP	MR	FCPsych, 5-year cohort	Age, gender	6
Harrison <i>et al.</i> , 1989 (D)	African–Caribbean 42 General population 89	131 (100)	Psychosis 42 RSch 28	IP, OP, CMHT	MR, Quest, Int	CS, FCPsych	Age, gender	4
Ineichen <i>et al.</i> , 1984 (D)	White–UK 193 West Indian 43 Other non-White 19 Other White 9	264 (100)	All diagnoses where there was compulsory admission	IP	MR	Retrospective, CS	Gender	4
Koffman <i>et al.</i> , 1997 (B)	White (75) Black (15) Asian (4) Black 37 Non-Black 101	3710 (93.2)	Schizophrenia	IP	MR, survey	CS, 1-day census	Age, gender	5
Lloyd & Moodley, 1992 (D)	Black Caribbean 131 White 337 White 511 African–Caribbean 72 British-born African–Caribbean 41	128 (95.2)	Schizophrenia 59 BAD 31 Other psychosis 11 Neurosis 9 Other non-Psych 15 Unknown 9	IP	MR, Int	One-day census of IP	Age, gender, compulsory detention	5
McCreadie <i>et al.</i> , 1997 (D)	Black Caribbean 131 White 337	468	Schizophrenia 468	IP, OP, GP, CMHT	MR, Quest	CS	Age, gender	4
McGovern & Cope, 1987 (A+B)	White 511 African–Caribbean 72 British-born African–Caribbean 41	587 (100)	Schizophrenia/PPsych 71 Affective disorder 56 Cannabis psychosis 17 Other 102	IP	MR	CS	Age, gender	5

Table 2 (continued)

Author (ethnic definition ¹)	Ethnic groups reported, n (%)	Actual sample size, n (% response rate)	Diagnoses, n (%) ²	Sample source	Data source	Design and follow-up	Other variables in analysis	Quality
McGovern & Cope 1991 (A+C)	African-Caribbean 33 White 29	62 (87)	Schizophrenia	IP	MR	CS		4
McKenzie et al, 1995 (A+C)	African-Caribbean 53 White 60 Total 191	113	Psychosis	IP	MR, Int	Cohort		10
Moodley & Thornicroft, 1988 (A)	West Indian 26 Other 9 White 65	100 (100)	Schizophrenia 7 ⁵ Affective 16 ⁵ , Other psychosis 5 ⁵	IP	MR, Quest combined	Mean follow-up at 49 months (African-Caribbean) at 44 months (White)	Age, gender, SES	2
Moodley & Perkins, 1991 (D)	African-Caribbean (48) White (42)	52 (86.7)	Schizophrenia (40.4) BAD (25.5) Depression (27.7)	IP	MR, Int	CP, CS	Age, gender, SES	3
Odell et al, 1997 (B)	White African-Caribbean Asian	752 (72) 125 GPs in 66 practices	GHQ score	Practice lists	Int, MR	CS	GHQ score, gender of GP, psychiatric history, physical health	10
Owens et al, 1991 (C)	African-Caribbean 120 White UK-born 120	275 (100)	Schizophrenia and PSchizo 114 Depression 63 Mania 41 Other psychosis 23 Neurosis, personality disorder, none 30	IP	MR, Int	Prospective	Age, gender, marital, PA, PCA	4
Parkman et al, 1997 (A+B)	White (UK-born) 114 White (non-UK-born) 20 Black Caribbean (UK-born) 27 Black Caribbean (non-UK-born) 23	184 (63)	Schizophrenia 59 APsych 7 Other NAPsych 30	CP in contact with SS, GPs, sheltered accommodation, voluntary, private, and self-help care; clergy; homeless and prison services	MR, Quest, Int	CS, of random sample of prevalent cases of psychoses in contact with specified agencies	Age, gender, SES	9
Perkins & Moodley, 1993 (D)	White (48) African-Caribbean (42)	52 (86)	Schizophrenia (40.4) BAD (25.5)	IP, CP	MR, Int	CS	Age, gender, PA, MHA, GPI, PI	3
Singh et al, 1998 (B+C)	Black Caribbean 44 Asian 21 White 352	417 (86.7)	Psychosis 233 non-Psych 3	IP	Quest	CP, prospective	Age, gender, SES, psychosis, risk of violence	9

Table 2 (continued)

Author (ethnic definition)	Ethnic groups reported, n (%)	Actual sample size, n (% response rate)	Diagnoses, n (%) ²	Sample source	Data source	Design and follow-up	Other variables in analysis	Quality
Takei et al, 1998 (A+D)	White 54	88 (81)	Schizophrenia,	IP admissions in 1973/4 followed up 18 years later	MR, Quest, Int	Prospective follow-up	Age, gender, SES, age at first onset	6
	African-Caribbean 34		Non-schizo					
Thomas et al, 1993 (A+C)	UK-born 1363	1692	All	IP	MR	CP, retrospective, CS	Age, gender, SES	5
	European		Schizophrenia					
	African-Caribbean ⁶ 126		BAD					
	African-Caribbean ⁷ 67							
	Asian (Indian/Pakistani) ⁶ 62							
	Asian ⁷ 74							
	African-Caribbean 50							
Turner et al, 1992 (C)	African 13	100 (63)	Schizophrenia 75	IP	MR	Retrospective, prospective	Age, gender, SES	4
	Caribbean 36		Mania 25					
	Asian 1		Personality disorder					
	European other 50		22					
	UK White 38		Psychosis 14					
	European 6		Organic 16					
	Cypriot 1		Depression 2					
	Irish 5		Other 7					
	Unknown 12		None 8					
	White 44		Unknown 13					
	African-Caribbean 29		NAPsych 110					
	African 32		(including 79 cases of RDC-based schizophrenia)					
	Other 5							
van Os et al, 1996 (B)	White 44	110	NAPsych 110	IP	MR	CS, retrospective	Age, gender	5
	African-Caribbean 29							

AE, accident & emergency; APsych, affective psychosis; BAD, bipolar affective disorder; CMHT, Community Mental Health Team; CP, consecutive patients; CS, cross-sectional; FCPsych, first-contact psychosis; For, forensic; GenPop, general population; GHQ, General Health Questionnaire; GP, general practitioner; GPI, general practitioner involvement; Int, interview; IP, in-patients; MHS, Mental Health Act status; MR, medical records; NAPsych, non-affective psychosis; Non-schizo, non-schizophrenia diagnosis; NOS, not otherwise specified; non-Psych, non-psychotic disorders; ONPsych, other non-organic psychosis; OP, out-patients; PA, previous admissions; PCA, previous compulsory admissions; PI, police involvement; PPsych, paranoid psychosis; Pris, prison; PSchizo, paranoid schizophrenia; Quest, questionnaire; RD, routine data; RDC, Research Diagnostic Criteria; RSch, restricted diagnoses of schizophrenia; SES, socio-economic status; SMI, severe mental illness; SS, social services.

1. Ethnic definition: A, by place of birth; B, from Office for National Statistics or Office of Population Censuses and Surveys; C, by other means; D, unstated (further details available from the authors upon request).

2. Some studies did not give numbers or percentages.

3. Percentages of out-patients/in-patients with the diagnosis.

4. Data for Site A/Site B.

5. For West Indians only.

6. First generation.

7. Second generation.

between people of African–Caribbean and African origin. Eight papers included South Asians as a separate category but did not distinguish between people of Pakistani, Indian or Bangladeshi origin. Six papers identified White subgroups but none analysed them separately. Ten papers used country of birth alongside ethnicity information. Nineteen studies did not use ethnic group census categories; studies collecting data before 1991 used proxy measures for ethnic group, such as place of birth. Thirteen papers did not give any explanation for their classification of ethnic groups. Most papers included small numbers of participants from each ethnic group. Twenty-eight papers adjusted for age, 28 for gender and 16 for some measure of socio-economic status, with 24 taking measures to address potential confounding due to variation in diagnoses or illness severity. Although socio-economic status is known to be a confounder in studies of ethnic variations in health, papers adjusting for it did not always score highly on the total quality scores. None of the papers reported sample size calculations. The majority of studies (26) investigated services in London; other locations were Birmingham (McGovern & Cope, 1987, 1991; Birchwood *et al*, 1992; Commander *et al*, 1997a,b, 1999), Manchester (Thomas *et al*, 1993), Nottingham (Harrison *et al*, 1989; Owens *et al*, 1991; Singh *et al*, 1998) and Bristol (Ineichen *et al*, 1984).

Do pathways to specialist care vary with ethnic group?

Black patients had more-complex pathways to specialist services, seeing at least three carers before contact with specialist services (Commander *et al*, 1999). Compared with White patients, a greater proportion of Black patients had some contact with a helping agency the week before psychiatric service contact (Harrison *et al*, 1989) and admission was more likely to follow a domiciliary visit (Commander *et al*, 1997a). Compared with White and South Asian patients who visited their general practitioner (GP), Black people were less likely to be referred to specialist services (Thomas *et al*, 1993; Cole *et al*, 1995; Burnett *et al*, 1999). An explanation might be the GPs' lower likelihood of recognising a psychiatric problem in Black people (Odell *et al*, 1997; Bhugra *et al*, 1999; Burnett *et al*, 1999). However, among patients presenting to general practice who are recognised

to have a mental health problem, Black patients were more likely to be found in specialist services (Commander *et al*, 1997b,c). The police were more likely to be involved in admissions or readmissions of Black people (Thomas *et al*, 1993; Burnett *et al*, 1999; Commander *et al*, 1999). These three papers had medium-quality scores, as did one showing that police involvement before admission was explained by a lack of GP involvement rather than ethnic origin of the patients (Cole *et al*, 1995). Two medium-quality papers found that Black people were most likely to present in crisis, often seeing the duty psychiatrist in an accident and emergency department as a first point of contact with services (Turner *et al*, 1992; Cole *et al*, 1995). In contrast, a low-quality paper showed no variation between ethnic groups in the pathways to specialist care (Moodley & Perkins, 1991). Variation in the diagnostic categories and differences in ethnic group composition do not explain the heterogeneous outcomes of these studies.

In west London, specialist referral following primary care assessments appeared to be equally common among White and South Asian patients, but hospital admission was more likely among South Asians following a domiciliary visit (Bhugra *et al*, 1999; Burnett *et al*, 1999). In Birmingham, South Asians had the highest community rates of mental disorder, were the most frequent consulters in primary care and were less likely than White people to have their mental disorder recognised (Commander *et al*, 1997b,c). Of all ethnic groups with a mental disorder, South Asians were the least likely to be referred to specialist care (Commander *et al*, 1997b; Odell *et al*, 1997). Quality ratings were similar for papers from Birmingham and London and do not explain the different findings. However, the two papers reporting no variation in detection between South Asians and Whites contained smaller samples (total South Asians=24) than studies detecting significant differences (total South Asians=1516).

Is contact between specialist services and Black and South Asian people maintained?

Compared with White patients, services were less likely to maintain contact with non-Whites in one part of south London (Norwood) but not in another neighbouring area (Nunhead; McCreadie *et al*,

1997). Another paper from London found no variation between ethnic groups in continuity of community care (Bindman *et al*, 2000), whereas African–Caribbean people in Birmingham had more 'broken contact' with aftercare services (McGovern & Cope, 1991). All three of these papers were of medium quality with a cross-sectional design and specifically recruited African–Caribbean people. The study with the largest sample size found differences between geographical areas, suggesting that variation in local service configuration and practice are influential and that ethnicity alone does not account for variations in patient contact (McCreadie *et al*, 1997).

In two papers from London, compared with White people, Black people were more likely to be in contact with services at 5- and 18-year follow-up, respectively (Takei *et al*, 1998; Goater *et al*, 1999). These papers were of medium quality and both recruited Black people of Caribbean origin. There were no papers that looked specifically at the pattern of South Asian peoples' contact with specialist services.

Use of in-patient services

Of 20 papers on in-patients, 17 reported measures of in-patient service use (representation on in-patient units (13) consistently showed greater use of in-patient services by Black people (McGovern & Cope, 1987; Owens *et al*, 1991; Birchwood *et al*, 1992; Thomas *et al*, 1993; Flannigan *et al*, 1994; Callan, 1996; van Os *et al*, 1996; Commander *et al*, 1997b,c; Koffman *et al*, 1997; McCreadie *et al*, 1997; Parkman *et al*, 1997; Takei *et al*, 1998). One of these positive studies was of high quality and nine were of medium quality. Two papers (of low quality) found no variation in in-patient service use (Ineichen *et al*, 1984; Castle *et al*, 1994). One paper, a first-incidence study, found an excess of in-patient use by White patients (Goater *et al*, 1999). A study of admissions found an excess of admissions among Black women in one London borough but a 40% lower admission rate compared with White women in another borough (Bebbington *et al*, 1994). Quality scores and differences in the ethnic composition of the samples, as far as this could be judged, do not account for this heterogeneity. The evidence most consistently suggests an excess use of in-patient facilities by Black patients. Two papers on first-contact (incident) admissions indicate no excess among Black people (Castle *et al*, 1994;

Goater *et al*, 1999), despite adjustment for age, gender and socio-economic status in one paper (Goater *et al*, 1999). Among patients of Caribbean origin, Jamaicans had the highest annual admission rates to British hospitals (Glover, 1989).

Despite variation in study quality, geographical region and South Asian group composition and different degrees of adjustment for confounders and diagnosis, results for in-patient use were more consistent for South Asians than for Black patients. Compared with Black patients, South Asians were less likely to be admitted for in-patient care, had the lowest admission rates to secure wards (Commander *et al*, 1997c; Koffman *et al*, 1997), had shorter admissions than other ethnic groups (Gupta, 1991) and were least likely to be readmitted (Birchwood *et al*, 1992). Compared with White patients, South Asians were more likely to be admitted to in-patient care (Commander *et al*, 1997b; Koffman *et al*, 1997).

Compulsory admissions

Of 23 papers measuring compulsory admissions, the majority (18) showed a higher rate for Black compared with White patients (Ineichen *et al*, 1984; Moodley & Thornicroft, 1988; Harrison *et al*, 1989; Dunn & Fahy, 1990; Moodley & Perkins, 1991; Owens *et al*, 1991; Birchwood *et al*, 1992; Crowley & Simmons, 1992; Lloyd & Moodley, 1992; Perkins & Moodley, 1993; Thomas *et al*, 1993; Davies *et al*, 1996; Koffman *et al*, 1997; McCreddie *et al*, 1997; Parkman *et al*, 1997; Singh *et al*, 1998; Takei *et al*, 1998; Commander *et al*, 1999). Eight of these adjusted for age, gender and socio-economic status. Two adjusted for other potential confounders: class; past admissions; Mental Health Act status (compulsory admission for assessment or detention); police involvement; and general population representation (Perkins & Moodley, 1993; McKenzie *et al*, 1995). Other papers adjusted for age at first contact (Takei *et al*, 1998), psychosis, risk of violence and diagnosis (Singh *et al*, 1998). One paper that adjusted for first-contact admissions, past admissions and marital status showed excess admissions among Black people (Owens *et al*, 1991), challenging reports that the absence of a relative or intimate relationship accounts for compulsory admission (Cole *et al*, 1995). Davies *et al* (1996) recruited people with psychosis from a broad range of services.

After adjustment for living alone as well as for age and total number of previous admissions, this paper still found excess compulsory admissions among Black people. Although papers reporting on in-patients suggest that a higher rate of readmissions and absconding explained the excess of compulsory admissions among Black people (Falkowski *et al*, 1990; Thomas *et al*, 1993), Davies *et al* (1996) adjusted for previous admissions and still found higher rates of compulsory admissions among Black people.

Some papers reported contradictory findings. For example, a medium-quality paper showed that, compared with White women, Black women were less likely to be voluntarily admitted in one London borough (South Southwark), but were more likely to be voluntarily admitted in another London borough (Hammersmith & Fulham; Bebbington *et al*, 1994). Such differences probably reflect variations in local practice and services. The majority of papers, using a variety of ethnic group measures and study designs and adjusting for a number of potential confounders, provide strong evidence for a relative excess of compulsory admissions of Black people.

Of three papers investigating compulsory admissions among South Asian patients, two low-quality papers found that these were less common among South

Asian patients (Birchwood *et al*, 1992; Crowley & Simmons, 1992). One medium-quality paper found no difference between South Asian and White patients (Thomas *et al*, 1993). These findings are inconclusive as all three studies relied on routinely collected data from medical records and included small numbers of South Asian people.

We calculated a summary odds ratio from the 12 papers (Fig. 1) that reported the exact proportions of compulsorily admitted Black and White in-patients and sample sizes. The meta-analysis gave a pooled odds ratio (Blacks compared with Whites) of 4.31 (95% CI 3.33–5.58). Analysis of the funnel plot did not show evidence of publication bias ($P=0.69$).

DISCUSSION

Main findings

Of many studies addressing any one of our review questions, few actually used the same measure of outcome; therefore, we did not report estimates because, if presented in isolation, these few estimates are likely to give a biased impression. However, the original data tables are available on request and will be posted on the Queen Mary website. Our review suggests that Black people are overrepresented among

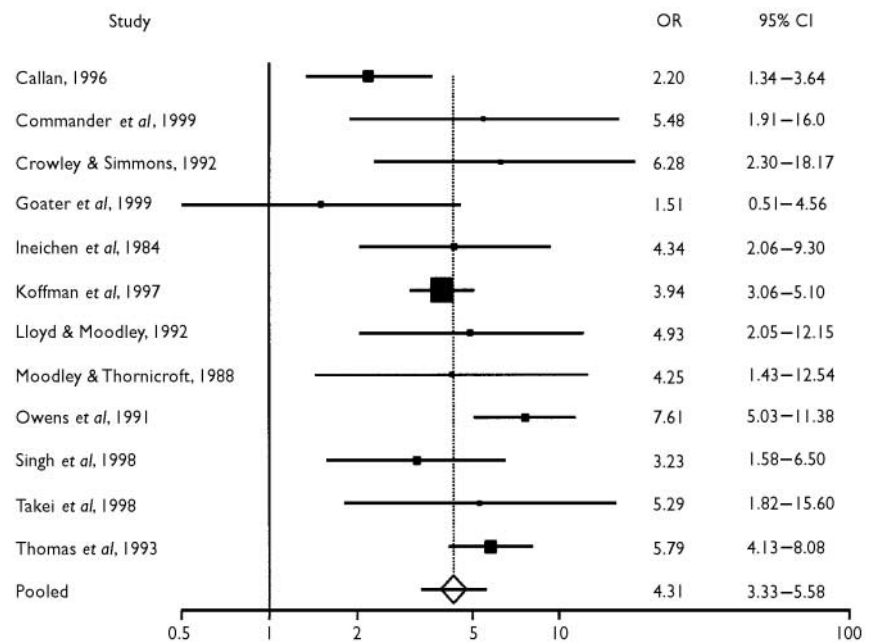


Fig. 1 Odds ratio meta-analysis plot (random effects), Black v. White, from meta-analysis of 12 papers on compulsory admission to in-patient facilities.

in-patients, and that Asian patients use in-patient facilities less often than do White patients. Unexpectedly, two papers report an excess of voluntary admissions for White people. There is some evidence for variations in pathways to specialist mental health care, with Black people traversing more complex pathways. Variation in primary care assessments or primary care involvement could explain some of the ethnic differences in pathways to specialist services but the primary care literature is small. Despite concerns about Black people falling out of care, two papers showed that they were more likely to be in contact with services after 5 and 18 years. This could reflect effective delivery of necessary care, or professionals' anxieties about perceived risk. Black people on in-patient units were four times more likely to experience a compulsory admission compared with White people. This is consistent with research in forensic and prison services (Bhui *et al*, 1998; Coid *et al*, 2000) and with research informing the proposed amendments of the Mental Health Act. These reported twice the risk (Wall *et al*, 1999) and six times the risk of compulsory detention of Black people (Audini & Lelliott, 2002).

Explaining the findings

No papers reported investigations of discrimination as a risk factor. Perceived discrimination could have a detrimental effect on mental health, placing Black people at higher risk of mental illness and perhaps of mental health service use (Karlsen & Nazroo, 2002). Perceived discrimination within health care services may further compound this, whereas excessive use of compulsory admission could account for less satisfaction with services and fear of contact with services. Although social isolation (Cole *et al*, 1995) can also mediate higher contact with emergency services among Black patients, local variations in clinical practice and service provision are well recognised as sources of inequalities. Most studies did not compare regional variations of clinical practice or service configuration. Most studies were based in London. Even though the majority of the UK's minority ethnic communities live in the largest cities, mental health policy should reflect the needs of regions with smaller proportions of minority ethnic groups. Indeed, recent evidence suggests that contextual effects, such as a lower ethnic density, can actually lead to higher rates

of schizophrenia requiring greater service use (Boydell *et al*, 2002).

Methodological considerations

The composition of any one ethnic group varied across the papers. This raises uncertainty about the generalisability of the findings from any single paper to populations that fall within the same ethnic group but have different ethnic subgroup profiles (for example, South Asians with different places of birth, country or region of origin within the Indian subcontinent). Improvement in the quality of the more recent publications is encouraging but the majority did not justify their classification of ethnic groups (Senior & Bhopal, 1994) and did not take account of possible variations in service use between subgroups *within* the larger ethnic categories. Adjustment for socio-economic status did not always relate to study quality, but adjustment for confounders generally and ethnic group definitions did relate to quality.

FUTURE PRIORITIES

Studies including White subgroups and South Asians, services outside of London and community and primary care studies were underrepresented in the literature. Future studies should explore explanations for variations that go beyond assigning all differences to ethnic origins. More-tailored study designs are needed to assess aetiological factors, mechanisms to explain ethnic variations and interventions. Where ethnic differences are evident, future investigations should address potential explanatory factors, such as discrimination, practice variation, service configuration and social isolation. Greater attention to place of birth, religion, duration of residence in the UK, place and level of education and cultural identity could also refine the interpretation of data beyond assigning all differences to ethnic origin.

APPENDIX

Inclusion and exclusion criteria

Inclusion criteria

Variation studies
UK-based studies, measuring variation in service use or provision for mental health care. Report data for more than one ethnic group, retrospective, prospective or cross-sectional studies of use or provision.

Intervention studies

International studies, including quantitative studies of interventions aiming to improve access and uptake of mental health services by different ethnic groups. The types of interventions could include educational (for users and/or health care professionals), organisational, financial, regulatory. Study designs could include controlled trial, parallel group or before-and-after studies.

Grey/unpublished literature

UK-based data sought from health authorities and by asking three 'experts' to identify any major omissions from the identified publications.

Service use

Studies that investigate the rates of use by ethnic groups of facilities provided for mental health care, whether service provision is targeted or non-targeted.

Service provision

Studies were included that investigate provision of services for different ethnic populations and the uptake of these services by their targeted population.

Management of disorders

Drug treatment of any affective or psychotic condition in primary or secondary care.

Participants

Adults identified by ethnic group with an affective or psychotic disorder.

Date of publication

January 1983 to end October 2000.

Language

English, French or German.

Exclusion criteria

Studies of services for children, adolescents, psychosexual disorders, substance misuse, alcohol misuse and forensic mental health were excluded.

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CLINICAL IMPLICATIONS

■ Black patients are more likely to be voluntary or compulsory in-patients.

■ Pathways to specialist services are more complex for Black patients, with more crisis routes of entry into care.

■ Primary care assessments show ethnic variations that could explain some of the variations in specialist service use.

LIMITATIONS

■ We excluded qualitative studies that might shed light on putative mechanisms that explain our findings.

■ The variety of study designs, quality of studies, ethnic group definitions and outcome measures makes comparison, and specifically meta-analyses, inappropriate. This limited the review to a narrative account of differences.

■ There is little information on White subgroups, practice and service variations, South Asian groups, services outside of London and primary care and community services.

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