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ORIGINAL PAPER

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Psychotic symptoms in the general population of England

A comparison of ethnic groups (The EMPIRIC study)

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Abstract *Background* There is considerable evidence that incidence of schizophrenia and other psychoses varies across ethnic groups in the UK, with particularly high rates for people of African-Caribbean origin. *Aims* The aims of this shady were to estimate in a community-based sample of people from ethnic minorities: 1) the prevalence of psychotic symptoms; and 2) risk factors for reporting psychotic symptoms. *Method* Face-to-face interviews were carried out with a probabilistic sample of 4281 adults from six ethnic groups living in the UK. Psychotic symptoms were measured using the psychosis screening questionnaire (PSQ). *Results* There was a twofold higher rate of reporting psychotic symptoms on the PSQ in Black Caribbean people compared with Whites. Adjustment for demographic factors had little effect on this association. *Conclusions* Prevalence rates of psychotic symptoms were higher in people from ethnic minorities, but were not consistent with the much higher first contact rates for psychotic disorder reported previously, particularly in Black Caribbeans.

Key words schizophrenia – epidemiology – psychiatric symptoms – ethnicity

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Introduction

Schizophrenia and other non-affective psychoses may be more common in people of African and African-Caribbean origin living in the UK than in the white population. Evidence for this arises from incidence studies (Harrison et al. 1988; King et al. 1994; Bhugra et al. 1997), but two studies also report higher incidence in people of South Asian origin (King et al. 1994; Aesop 2002). Most incidence research on ethnic differences in psychotic illnesses has been based on rates of contact with services, because of the relative rarity of these disorders in the general population and because most people affected are thought to make contact at some stage with treatment services. Furthermore, the white population which is often used as the comparator may be complex. King et al. (1994) reported that first contact rate for psychosis in White people who were not of British origin (predominantly, though not exclusively, of Irish origin) was 75 % higher than that for the White British group.

Prevalence studies in the community report less disparity in psychotic disorders between ethnic groups. In the *Fourth National Survey of Ethnic Minorities* (FNS), it was found that the group defined as Caribbean had an annual prevalence of non-affective psychosis (categories F20 to F29 in ICD-10) of 14 per 1000, compared to 8 per 1000 for the White group (Nazroo 1997). Furthermore, the difference between Caribbean and White people in estimated prevalence of psychotic illness in the FNS was largely accounted for by the relatively high prevalence among Caribbean women (Nazroo 1997).

There is evidence that both symptoms and underlying psychological mechanisms of psychosis have a continuous but highly skewed distribution that overlaps only partially with clinical disorder (van Os et al. 2001; Johns and van Os 2001). Although an individual may become more likely to need care as the symptoms cross some critical value, the cultural context of such symptoms and the degrees of preoccupation and distress are important factors (van Os et al. 2001). The cultural context of symptoms is crucial when people from a range of ethnic groups are considered. One could hypothesise, however, that the prevalence of such symptoms would at least match the differential between ethnic groups found for diagnosed psychotic illness. The EMPIRIC study of the mental health of ethnic minority populations in England (Sproston and Nazroo 2002) provided an opportunity to test hypotheses about community prevalence rates for psychotic symptoms in a range of ethnic minority populations.

We hypotherised as follows: 1) The prevalence of psychotic symptoms will be higher in ethnic minority than white British people and will at least equal the differentials seen for psychotic disorders; and 2) this will remain so after adjusting for relevant socio-demographic and cultural factors.

Aims

We aimed to: 1) estimate the prevalence of psychotic symptoms in a community-based sample of people from ethnic minorities; and 2) examine whether ethnicity was associated with screening positive on psychotic symptoms, after controlling for other socio-demographic factors.

Subjects and methods

We approached all participants who were aged 16–74 years in the 1999 Health Survey for England (HSE99) (Erens et al. 2001) and who had agreed to be re-contacted (Sproston and Nazroo 2002). This survey had been boosted to contain greater proportions of people from the main ethnic minority populations in Britain, namely White Irish, Black Caribbean, Bangladeshi, Indian and Pakistani. Participants in the HSE99 survey were allocated into an ethnic group on the basis of answers to a question on their family origins, which correlates highly with the classificatory system used in the 1991 British census (Nazroo 1997). Chinese respondents in the HSE99 were not included because they had previously been recruited from a previous study (Sproston et al. 1998) and so had already gone through two waves of sample attrition.

A White sample (not containing Irish people) was taken from the HSE98 (using the same classification as at HSE99) and again only those agreeing to a re-contact were approached. Survey questionnaires were translated into five languages, Hindi, Gujarati, Punjabi, Urdu and Bengali. A letter introducing the study preceded the survey visit and the questionnaires were presented using computer-assisted personal interviewing. An interviewer who spoke the relevant language assisted informants who were unable to undertake the interview in English.

Measures

Following confirmation of demographic data, the following standardised instruments were used.

The psychosis screening questionnaire (PSQ)

The PSQ screens for symptoms commonly found in psychotic disorders (Bebbington and Nayani 1992). We used the PSQ as it was used in the OPCS/ONS series of surveys (Singleton et al. 2000) and the *Fourth National Survey of Ethnic Minorities* (FNS) (Nazroo 1997). It covers five broad categories of symptoms: hypomania; thought interference; delusions of persecution; a feeling that something 'strange' is taking place that is hard to explain; and auditory hallucinations. Two or three questions cover each symptom category, a general introductory stem question and one or two more targeted questions for those who answer 'yes' to the introductory questions. The informant must answer 'yes' to all questions within a symptom category in order to screen positive on that item. In the standard use of the PSQ, informants are not asked to continue once they have answered positively to one item, as they are entered into a more detailed clinical assessment. However, as we did not conduct clinical assessments, informants were asked all of the stem questions.

The revised clinical interview schedule (CIS-R)

The CIS-R collects data on symptoms of common mental disorder and derives psychiatric diagnoses according to the tenth edition of the International Classification of Diseases (Goldberg et al. 1970; Lewis et al. 1992). The CIS-R enquires about the presence and severity of 14 non-psychotic psychiatric symptoms during the week prior to interview. The CIS-R score may be analysed as: (i) a continuous score, along a single continuum of severity (Krueger 1999); (ii) a dichotomous variable (case threshold ≥12) (Lewis et al. 1992); and (iii) ICD-10 diagnostic categories (Meltzer et al. 1995; Singleton et al. 2001).

The social functioning questionnaire (SFQ)

The SFQ was used to assess social function and chronic social strain (Tyrer 1990). It consists of eight questions each scored 0–3 with higher scores indicating greater dysfunction.

Analysis

The HSE surveys are not usually weighted because the sampling process produces an equal probability of selection for all eligible respondents. However, the ethnic minority boost in the 1999 HSE meant that the sample had to be weighted to correct for the unequal probabilities of selection for different classes of respondents. Three sets of weights were required for the HSE99 data, to correct for: (i) unequal probabilities of selection for postcode sectors; (ii) unequal probability of household selection within sectors; and (iii) varying probabilities of selection of adults within participating households. Weights were inversely proportional to the selection probabilities for postcode sectors, addresses, and number of adults living in participating households, respectively. These weightings were retained in the EMPIRIC analysis and, in addition, weights were applied to adjust for the non-response to the EMPIRIC survey. These non-response weights were obtained using regression modelling, based on HSE data for EMPIRIC informants and non-informants. All standard errors and confidence intervals were also corrected for auto-correlation within the stratified multi-stage design (Sproston and Nazroo 2002). Weighted and unweighted base rates are reported. We used descriptive statistics to compare the six ethnic groups on socio-demographic factors. We calculated age standardised risk ratios for any psychotic (PSQ) symptom for each ethnic group with reference to the white population.

We then used multiple logistic regression to explore whether any differences between groups remained after further adjustment for possible confounding influences in any association between psychotic symptoms and ethnicity. These were age; sex; highest educa-

tional level reached and social class of head of household as social class measures least likely to be affected by current psychotic symptoms; urban dwelling (as opposed to suburban or rural); marital status; age at migration; and score above the threshold of 12 on the CIS-R. We did not adjust for current employment because it may be affected by the presence of psychotic symptoms. As a last step, we adjusted for all of these variables in an overall model. Associations between reporting psychotic symptoms and social function, language spoken at interview and other psychological symptoms were also explored. We analysed the data using Stata version 7.

Results

Response rates and demography

4281 adults were interviewed, constituting 68.2 % of those eligible. Response rates were highest in White (71 %) and Irish (72 %) groups and lowest in the Indian group (62 %). Including those who refused to be re-contacted following participation in the HSE reduced the EMPIRIC survey response rate to 63.3 %. A total of 721 interviews were conducted in a language other than English. South Asian people were younger than the White participants and were more likely to married and less likely to be divorced than other participants (Table 1). The highest proportion of non-manual households was in the White group and the lowest in the Bangladeshi group.

Prevalence of psychotic symptoms

The prevalence of scoring positively on any PSQ item ranged from a low of 4.7 % in the Bangladeshi group to a high of 12.4 % in the Black Caribbean group. The number of psychotic symptoms ranged from one to four with no statistically significant variation in the number of such symptoms with ethnic group (symptoms grouped 1, 2, 3 or more, $Chi^2 = 9.57$, $p = 0.59$). Scoring positively on any PSQ item was more prevalent in the Black Caribbean, Pakistani, Indian and Irish groups than the White group, and lowest for the Bangladeshi group. However, age-adjusted relative risk ratios show that the only significant difference was the twofold greater prevalence for Black Caribbeans vs. Whites among women (Table 2).

Table 1 Demographic characteristics of survey population

	Ethnic group					
	White	Irish	Black Caribbean	Bangladeshi	Indian	Pakistani
	%	%	%	%	%	%
Age						
Male*						
16–34	32	25	42	52	36	52
35–54	43	48	29	31	44	33
55–74	26	27	29	18	19	15
Female*						
16–34	31	31	37	64	40	61
35–54	42	46	41	27	42	30
55–74	27	22	22	9	18	9
Marital status						
Male*						
Married/cohabiting	64	65	50	68	72	72
Divorced/separated	7	8	9	1	5	2
Widowed	2	3	3	0	0	1
Single never married	26	24	39	30	23	25
Female*						
Married/cohabiting	60	61	34	69	71	68
Divorced/separated	10	13	15	4	5	5
Widowed	6	4	3	8	5	3
Single never married	23	23	49	19	18	24
Social class of head of household						
Male*						
Non-manual	53	45	36	19	43	33
Manual	47	55	64	81	57	67
Female*						
Non-manual	59	51	47	14	46	36
Manual	41	49	53	86	54	64

* $p < 0.0001$

Table 2 Prevalence of psychotic symptoms by gender

	Cell percentages					
	White	Irish	Black Caribbean	Bangladeshi	Indian	Pakistani
Positive on any PSQ item						
Men	6.8 (4.4, 10.5)	8.0 (5.2, 12.3)	11.7 (8.3, 16.3)	5.1 (2.8, 8.8)	7.2 (4.5, 11.5)	10.6 (7.6, 14.6)
Women	5.4 (3.5, 8.1)	7.8 (5.2, 11.6)	12.4 (9.3, 16.3)	4.7 (2.7, 7.9)	10.1 (6.8, 14.7)	9.3 (6.5, 13.1)
Total	6.0 (4.4, 8.1)	7.9 (5.9, 10.6)	12.1 (9.7, 15.0)	4.9 (3.3, 7.1)	8.7 (6.4, 11.7)	9.9 (7.8, 12.5)
Age standardised risk ratio for positive on any PSQ item						
Men						
Risk ratio	1	1.46	1.56	0.65	1.08	1.36
Standard error	1	0.44	0.42	0.21	0.31	0.36
Women						
Risk ratio	1	1.64	2.13	0.65	1.77	1.48
Standard error	1	0.46	0.53	0.22	0.48	0.39
Total						
Risk ratio	1	1.55	1.85	0.65	1.42	1.42
Standard error	1	0.45	0.48	0.21	0.39	0.37
Bases (weighted)						
Men	364	323	280	321	317	345
Women	471	410	412	328	332	378
Total	835	733	692	649	649	723
Bases (unweighted)						
Men	368	329	280	312	315	337
Women	469	404	414	338	328	387
Total	837	733	694	650	643	724

(n) = 95 % confidence intervals of prevalence estimate

The association between ethnicity and reporting psychotic symptoms

As the interaction between ethnicity and sex in the association between ethnic group and experiencing psychotic symptoms was not statistically significant, we did not maintain the stratification by sex in our multivariate analysis. The pattern of unadjusted odds ratios (and those adjusted for age) for any psychotic symptom (Table 3) mirrored our findings for relative risk ratios in Black Caribbeans (Table 2). Age and social class appeared to positively confound the association with psychotic symptoms in Pakistani people. Adjustment for all potential confounders left only Black Caribbean people with a significantly higher odds ratio for psychotic symptoms, compared with their White counterparts.

Associations between social function and psychotic symptoms

In each ethnic group, participants who reported at least one symptom on the PSQ were significantly more likely ($p < 0.01$ or less) than those with no psychotic symptoms to score above the median on the social function questionnaire, indicating greater social dysfunction (Whites 79.6 vs. 40.9 %, Irish 78.3 vs. 42.8 %, Black Caribbean 73.7 vs. 43.3 %, Bangladeshi 79.2 vs. 52 %, Indian 78.6 vs. 47.5 %, Pakistani 83.9 vs. 50.9 %). The proportion of people reporting psychotic symptoms and scoring above the median on social function did not differ significantly between ethnic groups. A positive, linear association was seen between number of psychotic symptoms and poorer social function (higher score on social functioning questionnaire) (Table 4).

Language of interview and psychotic symptoms

When associations between language of interview and scoring any psychotic symptom were examined in Bangladeshi, Indian and Pakistani people, only Pakistanis who were positive on any PSQ item were less likely to be interviewed in their own language than those who were PSQ negative (5.5 vs. 11.5 %, $Chi^2 = 5.75$, $p = 0.02$). No such differences existed for Bangladeshi (5.7 vs. 4.2 %) or Indian (8.8 vs. 8.2 %) participants.

Psychotic symptoms and other psychological symptoms

Participants who reported any psychotic symptom were more likely to have scored 4 or more on the 12-item General Health Questionnaire (Goldberg and Williams 1988) during the HSE98 or 99 data collection 2–3 years

Table 3 Relationship between ethnicity and any psychotic symptom before and after adjustment for possible confounders/mediators (odds ratios and 95 % confidence intervals)

	White	Irish	Black Caribbean	Bangladeshi	Indian	Pakistani
Unadjusted	1	1.34 (0.85, 2.12)	2.15 (1.44, 3.24)	0.80 (0.48, 1.35)	1.49 (0.94, 2.37)	1.72 (1.13, 2.62)
Adjusted for age	1	1.36 (0.87, 2.15)	2.06 (1.36, 3.10	0.68 (0.40, 1.15)	1.41 (0.88, 2.24)	1.46 (0.95, 2.26)
Adjusted for sex	1	1.34 (0.85, 2.12)	2.16 (1.44, 3.24)	0.80 (0.48, 1.35)	1.49 (0.94, 2.37)	1.72 (1.13, 2.62)
Adjusted for education	1	1.29 (0.81, 2.05)	2.16 (1.43, 3.27)	0.74 (0.43, 1.28)	1.47 (0.92, 2.35)	1.68 (1.09, 2.59)
Adjusted for social class of head of household	1	1.36 (0.86, 2.15)	2.06 (1.36, 3.13)	0.76 (0.44, 1.33)	1.39 (0.87, 2.25)	1.54 (0.98, 2.43)
Urban dwelling	1	1.36 (0.84, 2.19)	2.03 (1.29, 3.18)	0.69 (0.37, 1.27)	1.51 (0.93, 2.46)	1.68 (1.07, 2.63)
Adjusted for marital status	1	1.34 (0.85, 2.12)	1.83 (1.21, 2.78)	0.86 (0.51, 1.44)	1.62 (1.02, 2.57)	1.84 (1.20, 2.81)
Adjusted for age at migration*	1	1.39 (0.88, 2.19)	2.23 (1.48, 3.35)	0.90 (0.52, 1.56)	1.65 (1.02, 2.67)	1.91 (1.24, 2.93)
Adjusted for scoring above threshold 12 on CIS-R	1	1.23 (0.79, 2.03)	2.20 (1.46, 3.34)	0.88 (0.52, 1.48)	1.44 (0.89, 2.32)	1.61 (1.05, 2.48)
Full model	1	1.28 (0.76, 2.17)	1.84 (1.11, 3.03)	0.63 (0.31, 1.28)	1.45 (0.82, 2.56)	1.31 (0.75, 2.28)

* born in UK or immigrated before age 11 vs. immigrated age 11 or older

Table 4 Psychotic symptoms and social dysfunction (row percentages)

	Social Function Questionnaire*	
	Score above median (row %)	Unweighted base
Number of psychotic symptoms		
0	46.0	3942
1	75.6	250
2	81.9	60
3	99.1	29

Design-based F(2.36, 10091.18) = 49.9326, p = 0.0000
* indicates poorer social function

earlier [35.5 vs. 17.2 %, F (2.00, 7631.85) = 26.2340, p = 0.0000]. Between 45 and 59 % of participants in each ethnic group who reported psychotic symptoms also scored 12 or more on the CIS-R indicating important neurotic symptoms; however, this proportion did not vary with ethnicity to a statistically significant degree.

Discussion

Main findings

We report a twofold higher rate of reporting psychotic symptoms on the PSQ in Black Caribbean people compared with Whites. Adjustment for socio-demographic factors, social function and other psychological symptoms had little effect on this relationship. Although there was evidence for a raised prevalence of psychotic symptoms in Pakistani people, this did not persist after adjustment for potential confounding factors.

Strengths and limitations

One of the strengths of our study was that participants were drawn from the community rather than from people in contact with health or social services. Contact with services, even when access is universal as in the British NHS, relates to how psychiatric symptoms are perceived, evaluated and acted upon, rather than illness *per se* (Blane et al. 1996). Interpreting differences in treatment rates across ethnic groups is difficult, particularly as responses to mental disturbance may be influenced by a number of factors that vary by ethnicity, such as socioeconomic position, traditions, health beliefs, as well as lay and formal referral systems (Blane et al. 1996).

There are a number of limitations. Firstly, people with psychotic symptoms may be less likely to participate in epidemiological research than those without such symptoms. Furthermore, time spent in the UK or language at interview could interact with psychotic symptoms to influence participation in ways we do not yet understand. To off-set this, the sample was weighted to adjust for non-response at the psychiatric assessment, using the detailed information available from HSE variables to identify factors that predicted non-response. Although using translated instruments may have affected our findings in people whose first language was not English, this possibility only appeared likely in the Pakistani sample. Finally, we cannot be sure that all psychotic symptoms reported would bear up under rigorous clinical assessment. They remain answers to screening questions and must be regarded in that light.

Ethnicity, psychotic symptoms and psychotic illness

There are clear links between community prevalence of psychotic symptoms and rates of clinical disorder (van Os et al. 2001). Thus, we would have expected ethnic dif-

ferences in rates of psychotic symptoms to have been at least as great as that seen in several incidence studies of syndromal schizophrenia in the UK. A twofold differential between Black Caribbean and White participants is much less than that commonly reported in most first contact studies, but is in keeping with at least two that suggest ethnic differences are more modest (King et al. 1994; Bhugra et al. 1997) and with the community prevalence estimates of the FNS (Nazroo 1997). We have estimated prevalence of psychotic symptoms which depends both on incidence rates and rates of resolution. If episodes of psychosis and symptoms of psychosis were shorter in duration in African Caribbeans, this could account for the discrepancies in the effect of ethnicity between psychosis (incidence) and symptom (prevalence) studies. There is already evidence that episodes of psychosis are briefer in African Caribbeans in clinical populations (McKenzie et al. 2001).

Psychotic symptoms and ethnicity

It is possible that reporting PSQ symptoms means different things in each culture. However, there are four things against this. Firstly, a qualitative study conducted in parallel with this research, revealed that although the nature of stresses predominating in each ethnic group were somewhat different, there were few differences between ethnic groups in the idioms used to convey distress or disorganisation (Sproston and Nazroo 2002). Secondly, although the difference in rates of psychotic symptoms was lower than in prevalence studies based on treated episodes of disorder, the predominance in the Black Caribbean group remained. Thirdly, the wording of the PSQ questions carries a clear implication that other people would perceive the symptom as abnormal. Finally, disruption of social function in the context of psychotic symptoms was found consistently across all ethnic groups and varied linearly with number of psychotic symptoms. This is consistent with other studies using the SFQ that have shown that the presence of psychotic symptoms increases social dysfunction scores (Tyrer et al. 1998; Harrison-Read et al. 2002). Despite such justifications of our study, we cannot be certain that the validity of the PSQ as a screening measure for psychotic symptoms or psychotic disorder does not differ across the different UK ethnic groups. Further research needs to address directly the cross-cultural validation of the instrument.

Conclusions

Psychotic symptoms were more common in people from ethnic minorities, but not at a rate that would confirm the much higher first contact rates for psychotic disorder found, particularly among Black Caribbeans living in the UK.

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References

1. Aesop study team (2002) Raised incidence of all psychosis in UK migrant populations. Schizophr Res 53:33
2. Bebbington P, Nayani T (1995) The psychosis screening questionnaire. Int J Meth Psychiatr Res 5:11–19
3. Bhugra D, Hilwig M, Hossein B, Marceau H, Neehall J, Leff J, Mallett R, Der G (1996) First-Contact Incidence Rates of Schizophrenia in Trinidad and One-Year Follow-up. Br J Psychiatry 169: 587–592
4. Bhugra D, Leff J, Mallet R, Der G, Corridan B, Rudge S (1997) Incidence and outcome of schizophrenia in Whites, African-Caribbeans and Asians in London. Psychol Med 27:791–798
5. Bhui K, Brown P, Hardie T, Watson JP, Parrott J (1998) African-Caribbean men remanded to Brixton prison. Br J Psychiatry 172: 337–344
6. Blane D, Power C, Bartley M (1996) Illness Behaviour and the Measurement of Class Differentials in Morbidity. J R Stat Soc 156:77–92
7. Chakraborty A, McKenzie K, King M Discrimination, ethnicity and psychosis- a qualitative study. Cul Med Psychiatry (in press)
8. Clayton D, Hills M (1993) Statistical Models in Epidemiology. Oxford University Press, Oxford
9. Cole E, Leavey G, King M, Johnson-Sabine E, Hoar A (1995) Pathways to care for patients with a first episode of psychosis. A comparison of ethnic groups. Br J Psychiatry 167:770–776
10. Eagles JM (1991) The relationship between schizophrenia and immigration. Are there alternative hypotheses? Br J Psychiatry 159:783–789
11. Erens B, Primatesta P (1999) Health Survey for England: Cardiovascular Disease '98. London: TSO
12. Erens B, Primatesta T, Prior G Health (1999) Survey for England: The Health of Minority Ethnic Groups. The Stationery Office London 2001
13. Fabrega H (1989) Cultural relativism and psychiatric illness. J Nerv Ment Dis 177:415–425
14. Gilvarry CM, Walsh E, Samele C, Hutchinson G, Mallett R, Rabe-Hesketh S, Fahy T, van Os J, Murray R (1999) Life events, ethnicity and perceptions of discrimination in patients with severe mental illness. Soc Psyciatry Psychiatr Epidemiol 34:600–608
15. Goater N, King M, Cole E, Leavey G, Johnson-Sabine E, Blizard R, Hoar A (1999) Ethnicity and outcome of psychosis. Br J Psychiatry 175:34–42
16. Goldberg DP, Cooper B, Eastwood MR, Kedward HB, Shepherd MA 1970) standardised psychiatric interview for use in community surveys. Br J Prev Soc Med 24:18–23
17. Goldberg D, Williams D (1988) A User's Guide to the General Health Questionnaire NFER_Nelson, Windsor, UK
18. Goodman R, Richards H (1995) Child and adolescent psychiatric presentations of second-generation Afro-Caribbeans in Britain. Br J Psychiatry 167:362–369
19. Harrison G, Owens D, Holton A, Nielson D, Boot D (1988) A prospective study of severe mental disorder in Afro-Caribbean patients. Psychol Med 18:643–657
20. Harrison G, Amin S, Singh SP, Croudace T, Jones P (1999) Outcome of psychosis in people of African-Caribbean origin. Br J Psychiatry 175:43–49
21. Harrison G, Hopper K, Craig T, Laska E, Siegel C, Wanderling J, Dube KC, Ganev K, Giel R, an der Heiden W, Holmberg SK, Janca A, Lee PWH, León CA, Malhotra S, Marsella A J, Nakane Y, Sartorius N, Shen Y, Skoda C, Thara R, Tsirkin SJ, Varma VK, Walsh D, Wiersma D (2001) Recovery from psychotic illness: a 15- and 25-year international follow-up study. Br J Psychiatry 178:506–517

22. Harrison-Read P, Lucas B, Tyrer P, Ray J, Shipley K, Simmonds S, Knapp M, Lowin A, Patel A, Hickman M (2002) Heavy users of acute psychiatric beds: randomised controlled trial of enhanced community management in an outer London borough. Psychol Med 32:413–426
23. Hickling FW, Rodgers-Johnson P (1995) The incidence of first contact schizophrenia in Jamaica. Br J Psychiatry 167:193–196
24. Johns LC, van Os J (2001) The continuity of psychotic experiences in the general population. Clin Psychol Rev 21:1125–1141
25. King M, Coker E, Leavey G, et al (1994) Incidence of psychotic illness in London: comparison of ethnic groups. Br Med J 309: 1115–1119
26. Krueger RF (1999) The structure of the common mental disorders. Arch Gen Psychiatry 56:921–926
27. Lewis G, Croft-Jeffreys C, David A (1990) Are British psychiastrists racist? Br J Psychiatry 157:410–415
28. Lewis G, Pelosi AJ, Araya R, Dunn G (1992) Measuring psychiatric disorder in the community: a standardised assessment for use by lay interviewers. Psychol Med 22:465–486
29. Littlewood R, Lipsedge M (1988) Psychiatric illness among British Afro-Caribbeans. Br Med J 296:950–951
30. Lloyd K (1998) Ethnicity, social inequality and mental illness. Br Med J 316:1763
31. Mahy GE, Mallett R, Leff J, Bhugra D (1999) First-contact incidence rate of schizophrenia on Barbados. Br J Psychiatry 175: 28–33
32. McKenzie K, Van Os J, Fahy T, Jones P, Toone B, Murray RM (1995) Psychosis with good prognosis in Afro-Caribbean people now living in the United Kingdom. Br Med J 311:1325–1328
33. McKenzie K (1999) Moving the misdiagnosis debate forward. Int Rev Psychiatry 1:153–161
34. McKenzie K, Samele C, Van Horn E, Tattan T, Van Os J, Murray R (2001) Comparison of the outcome and treatment of psychosis in people of Caribbean origin living in the UK and British whites. Br J Psychiatry 178:160–165
35. Meltzer H, Gill B, Petticrew M (1995) OPCS Surveys of Psychiatric Morbidity in Great Britain. Report No 1. The prevalence of psychiatric morbidity among adults aged 16–64 living in private households in Great Britain. London: HMSO
36. Nazroo JY (1997) Ethnicity and Mental Health: Findings from a National Community Survey, London: Policy Studies Institute
37. Platt S, Weyman A, Hirsch S, Hewett S (1980) The social behaviour assessment schedule (SBAS): rationale, contents, scoring and reliability of a new interview schedule. Soc Psychiatry 15: 43–55
38. Singleton N, Bumpstead R, O'Brien M, Lee A, Meltzer H (2001) Psychiatric morbidity among adults living in private households, 2000, London: The Stationery Office
39. Sharpley M, Hutchinson G, McKenzie K, Murray RM (2001) Understanding the excess of psychosis among the African-Caribbean population in England. Review of current hypotheses. Br J Psychiatry – (Suppl 40):s60–68
40. Smith P, Prior G (1997) The Fourth National Survey of Ethnic Minorities: Technical Report. London: Social and Comunity Planning Research
41. Sproston K, Pitson L, Whitfield G (1998) The health and lifestyles of Chinese people living in England, London HMSO
42. Sproston K, Nazroo J (eds) (2002) Ethnic Minority Psychiatric Illness Rates in the Community (EMPIRIC). London: TSO
43. StataCorp. Stata Statistical Software: Release 7.0. Stata Corporation, 702 University Drive East, College Station, Texas, USA, 2001
44. Takei N, Persaud R, Woodruff P, Brockington I, Murray R (1998) First episode of psychosis in Afro-Caribbean and White people. Br J Psychiatry 172:147–153
45. Tyrer P (1990) Personality disorder and social functioning. In: Peck DF, Shapiro CM (eds) Measuring Human Problems: a Practical Guide Wiley London, pp 119–142
46. Tyrer P, Evans K, Gandhi N, Lamont A, Harrison-Read P, Johnson T (1998) Randomised controlled trial of two models of care for discharged psychotic patients. Br Med J 316:106–109
47. Van Os J, Hanssen M, Bijl RV, Vollebergh W (2001) Prevalence of psychotic disorder and community level psychotic symptoms. Arch Gen Psychiatry 58:663–668
48. Weich S, Nazroo J, Sproston K, McManus S, Blanchard M, Erens B, Karlsen S, King M, Lloyd K, Stansfeld S, Tyrer P Common Mental Disorders and Ethnicity in England: The EMPIRIC Study. Psychological Medicine (in press)