

Schizophrenia among Surinamese in the Netherlands: high admission rates not explained by high emigration rates

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ABSTRACT

Background. A high risk of schizophrenia has been found among Caribbean immigrants in the Netherlands and Great Britain. One hypothesis to explain these findings is that patients with a diagnosis of schizophrenia or patients with symptoms of psychosis not specifically diagnosed, emigrate more than the general population. Such selection might account for high rates of Surinamese patients with a diagnosis of schizophrenia in Netherlands psychiatric hospitals. We examined this hypothesis.

Methods. The files of patients with schizophrenia or patients suffering from unspecified psychosis were selected from the archives of the National Psychiatric Hospital in Surinam. These patients were traced to investigate patterns of emigration. Data from the Central Bureau for Statistics in the Netherlands and from the Central Population Bureau in Surinam provided the percentage of the general Surinamese population that emigrated to the Netherlands. The difference between the two percentages was evaluated using the chi-squared test. Using the same method the percentage of remigration from the Netherlands among Surinamese patients was compared with the percentage of remigration among the general Surinamese population.

Results. Surinamese patients with schizophrenia or unspecified psychosis did not emigrate more frequently to the Netherlands compared with the general Surinamese population. They did remigrate significantly more frequently.

Conclusion. High migration rates do not explain the high hospital admission rates for schizophrenia among Surinamese in the Netherlands.

INTRODUCTION

In the Netherlands the frequency of first admissions for schizophrenia among people born in Surinam is about five times greater than the frequency among people born in the Netherlands (Selten & Sijben, 1994). First admission rates were determined in 1990 using data from the Netherlands Psychiatric Registry. The conclusions were replicated after examining data over a longer period, from 1983 to 1992

(Selten *et al.* 1997). The findings correspond with research in the United Kingdom, where many authors using different methodologies found a high risk of schizophrenia among first generation Afro-Caribbeans and an even higher risk among second generation Afro-Caribbeans in Britain (reviewed by Harrison, 1990; Wessely *et al.* 1991; Thomas *et al.* 1993; King *et al.* 1994; van Os *et al.* 1996; Bhugra *et al.* 1997; Harrison *et al.* 1997). The second generation of immigrants in Great Britain has now reached the age at which schizophrenia usually manifests itself. Mass migration from Surinam (former Netherlands Guyana) to the Netherlands started around Surinam's declaration of independence

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(1975) and lasted until the early 1980s (Penninx, 1996). That is considerably later than the massive migration of Caribbeans to Great Britain. On the basis of the data from the United Kingdom, it is likely that the Netherlands will have a large number of admissions of second generation migrants with schizophrenia in the near future. Understanding the backgrounds to the high frequencies of admissions for schizophrenia is essential. Various suggestions have been made to explain the high incidence of schizophrenia among Caribbean migrants (Eaton, 1985; Cochrane & Bal, 1987; Kleinman, 1988; Harrison, 1990; Fernando, 1991; McGovern & Cope, 1991; Wessely *et al.* 1991; Eagles, 1995; Bogers, 1996). In his classic study of Norwegian emigrants to the USA Ødegård (1932) suggested there was an increased likelihood of individuals at risk of schizophrenia to emigrate. Following this idea relatively more Caribbeans with schizophrenia than Caribbeans without schizophrenia would have emigrated to Great Britain or to the Netherlands. This could explain the relatively large number of Surinamese schizophrenic patients in the Netherlands. In this paper we examine if Surinamese patients suffering from schizophrenia, according to DSM-III-R criteria, or from not clearly categorized psychotic symptoms who come into contact with psychiatric services during a period of time, travel more often to the Netherlands than the Surinamese population over the same period.

METHOD

Subjects

In the afore-mentioned research involving the Netherlands psychiatric registry, the frequency of first admissions for schizophrenia was determined from admissions and sociodemographic data between 1986 through 1990 (Selten & Sijben, 1994). We collected data by selecting files from the archives of the National Psychiatric Hospital (*'s Lands Psychiatrisch Ziekenhuis, LPZ*), Surinam's only psychiatric hospital. We selected the files of those in-patients and out-patients who came to the hospital for the first time between 1984 and 1990. We assumed that in those years patients had emigrated to the Netherlands and were registered by 1990 in case of decompensation and admission to a psychiatric setting, thus possibly contributing to the

frequency of admissions found in that year. The selected patient files were examined for diagnosis and symptoms by the first author, an experienced diagnostician. For inclusion in this research the patient file had to indicate either a diagnosis of schizophrenia according to DSM-III-R criteria or symptoms of psychosis, not (yet) diagnosed according to the DSM classification. The latter files included positive symptoms of psychosis, mostly of relative short duration (weeks up to months), sometimes accompanied by some negative symptoms and not specifically diagnosed according to DSM categories. In this article those patients will be called psychotic Not Otherwise Specified (NOS), because, if a DSM category should be chosen the category of the psychotic disorder NOS is suitable. Since a diagnosis of psychotic disorders is often changed after first contact with psychiatric services (Chen *et al.* 1996), this category is considered to have a great chance of being changed into a diagnosis of schizophrenia in the following years. We tried to locate and subsequently interview the patients selected. A more detailed description of this procedure is given elsewhere (Bogers & de Jong, 1998).

From the LPZ in-patient archives, estimated at 2500 files, 65 files of the previously mentioned years were drawn at random. We selected 44 files (68%) for further examination as they included a diagnosis of schizophrenia or psychosis NOS. Of these 44 patients, six patients (9%) were dead. Moreover, of two patients (3%) insufficient information was found for inclusion in this research. Our final in-patient sample therefore included 36 cases.

Most patients were selected from the out-patient clinic. We assumed that these patients would be more capable of emigration than patients who had been admitted to the clinic. Out-patients were sampled from one of the three out-patient clinics, located in the same premises. The number of files in this clinic was estimated at 3000. The other out-patient clinics mainly cover patients with personality disorders and patients with a severe stable deficit syndrome (Amador *et al.* 1999) and limited social support. On the basis of information from Surinamese psychiatrists and of research on the archives, it appears highly unlikely that patients from these two out-patient clinics would have emigrated. All 1744 available patient files, registered in the

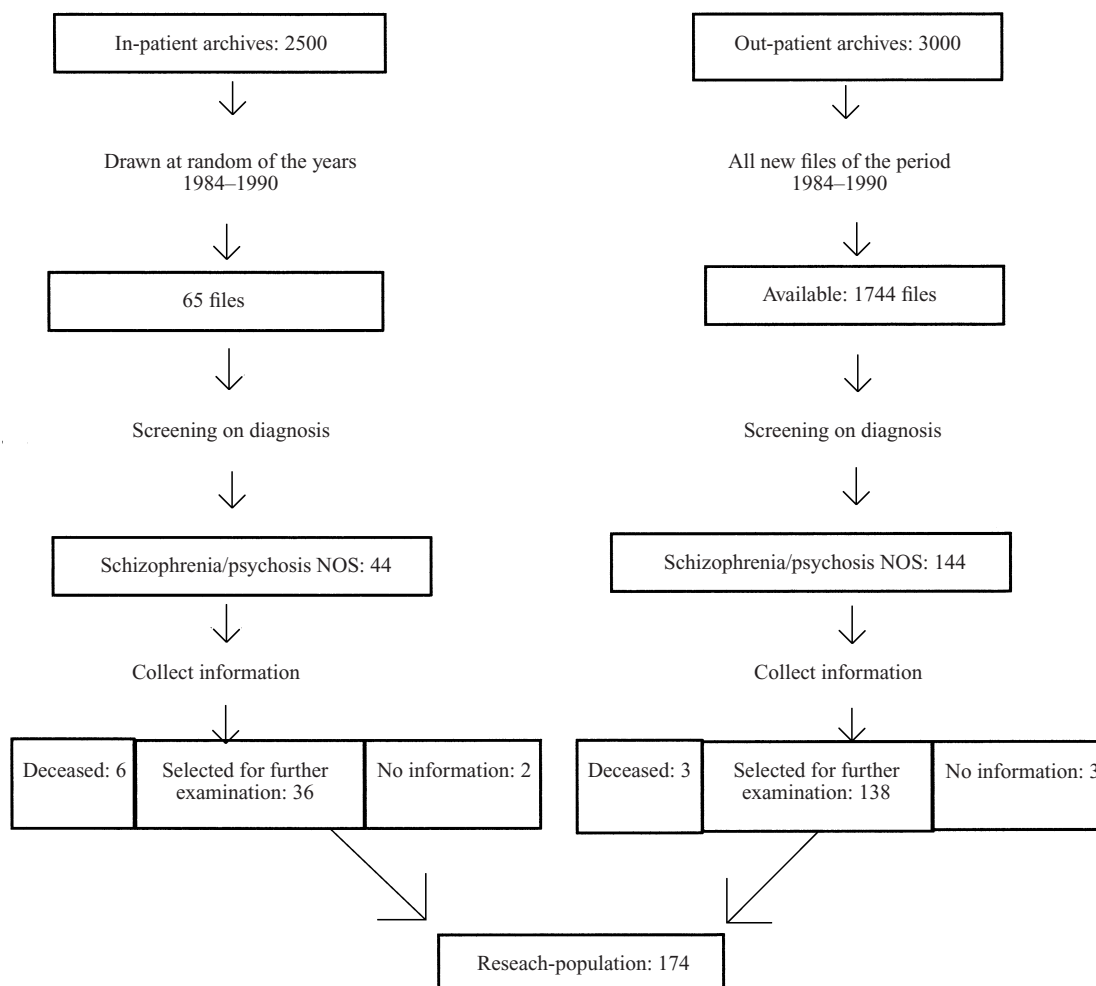


FIG. 1. Selection of Surinamese in-patients and out-patients for further examination.

mentioned out-patient clinic between 1984 and 1990, were examined. On the basis of diagnostic criteria, 144 files (8%) were selected for further examination. Of these patients, three patients (2%) had died and of three patients (2%) no sufficient information could be obtained. Therefore, our final out-patient sample included 138 people (Fig. 1).

In 66% of the patients involved ($N = 174$), the patient was the most important source of information. For the remaining cases reliable other sources were found, mostly next-of-kin. Patients or reliable informants were visited in the clinic or out-patient clinic. They were approached through telephone, letter or general practitioner. If necessary, information was

obtained by home visits at the last known place of residence. Patients and informants were asked questions regarding the patient's possible migration and psychiatric history.

Analyses

On the basis of the 1984-1990 Netherlands' immigration data of the Central Bureau for Statistics (CBS) in the Netherlands and the number of inhabitants of Surinam according to the Central Population Bureau (CBB) in Surinam, we determined what percentage of the Surinamese population emigrated to the Netherlands between 1984 and 1990 (Central Bureau for Statistics, 1995; Central Population Bureau, 1996). The emigration percentage of the

whole group of subjects and of the group divided according to treatment setting (in-patients/out-patients) and diagnosis (schizophrenia/psychosis NOS) was compared with the emigration percentage of the Surinamese population. An additional analysis was done dividing the groups according to sex: male patients *versus* male emigrants and female patients *versus* female emigrants. Patients were counted as emigrants if they had travelled to the Netherlands in the period 1984–1990, also when this journey took place before registration at the hospital in Surinam. We assume that persons who get in contact with the psychiatric services do not feel well before visiting a psychiatrist. This particularly counts in Surinam where we noticed that patients and families wait for a long time before seeking professional help. Nevertheless, it is possible that people only emigrate to the Netherlands after being diagnosed, i.e. after contact with Surinamese psychiatry. If these patients sought professional help during the first years of the research period, then they would have had more time to emigrate during the research period compared to those who made contact in subsequent years. Considering this possibility we compared the groups by their chances per person-year.¹

In general, childhood schizophrenia is rare. The patient sample consisted of adults only. Therefore, we also calculated the age-corrected emigration percentage for the population, excluding people younger than 15.

First, all the Surinamese patients travelling to the Netherlands were considered to be emigrants, whereas they were probably not always registered as such by the CBS because some of the patients may have come for short visits or may have been illegal. Subsequent analysis excluded those who reported to have travelled to the Netherlands without being registered as emigrants by the CBS.

The CBS remigration data provided us with the number of remigrants between 1984 and 1990 (Central Bureau for Statistics, 1995). By dividing the number of remigrants by the number of emigrants we determined the proportion of remigration during the mentioned period.

¹ Number of emigrants per 100 years = $\frac{\text{emigrants} \times 100}{\text{population} \times \text{time}}$
where, time = mean number of years available for emigration per patient or population member.

We used the chi-square test for all comparisons of percentages. Our data do not agree with the hypothesis that high emigration rates cause high admission rates if emigration by Surinamese patients is not significantly higher than the emigration by the general Surinamese population.

RESULTS

In total 179 patients, 38 from the clinic and 141 from the out-patient clinic, were eligible for interviewing. No reliable information was found concerning the migration pattern of two in-patients and three out-patients. These patients were excluded from the study.

The research population ($N = 174$) consisted of 127 men (73%) and 47 women (27%) between 15 and 64 years old (mean = 29.8; s.d. = 10.5). Of these 174 patients, 122 (70%) were patients with a diagnosis of schizophrenia; 52 patients (30%) were considered to be suffering from psychosis NOS (Table 1).

Emigration

In the years 1984 to 1990, 37369 Surinamese people emigrated to the Netherlands (mean age emigrants ≥ 15 years = 32.9; s.d. = 14.6) (Central Bureau for Statistics, 1995). In those years the average number of inhabitants in Surinam was 390922. Therefore, in those years almost 10% (9.6%) of the Surinamese population emigrated to the Netherlands. In Table 2 the analyses for the various groups of patients have been summarized. Of all the examined patients ($N = 174$) 11 persons travelled (i.e. emigrated) to the Netherlands in the period 1984–1990. This percentage (6.3%) is not different from the percentage of emigrants among the general Surinamese population ($\chi^2(1) = 2.11$; $P = 0.15$).

Among the patients with a diagnosis of schizophrenia ($N = 122$) seven people (5.7%)

Table 1. *Characteristics of 174 Surinamese psychiatric patients by sex and age*

| Sex | Diagnosis (%) | | Total (%) |
|--------|---------------|---------------|-----------|
| | Schizophrenia | Psychosis NOS | |
| Male | 89 | 38 | 127 (73) |
| Female | 33 | 14 | 47 (27) |
| Total | 122 (70) | 52 (30) | 174 (100) |

Table 2. Emigration to the Netherlands of Surinamese patients with a diagnosis of schizophrenia or psychosis NOS, compared to the emigration of the Surinamese population, 1984–1990

| | Research-population | | Compared with the Surinamese population* | |
|---------------|---------------------|---------------------------------|--|------|
| | N | Number of emigrants (%; 95% CI) | χ^2 | P |
| Total | 174 | 11 (6.3; 3.6–11.3) | 2.11 | 0.15 |
| Diagnosis | | | | |
| Schizophrenia | 122 | 7 (5.7; 2.8–11.8) | 2.06 | 0.15 |
| Psychosis NOS | 52 | 4 (7.7; 3.1–19.7) | 0.21 | 0.65 |
| In-patients | 36 | 0 — | 3.81 | 0.05 |
| Out-patients | 138 | 11 (8.0; 4.5–14.3) | 0.40 | 0.53 |

95% CI, 95% confidence interval.

* Emigration in the Surinamese population was 9.6%.

travelled to the Netherlands between 1984 and 1990. From the group of patients with psychosis NOS ($N = 52$) four people (7.7%) travelled to the Netherlands in the same period. For the clinic's in-patients the percentage is zero; for the out-patients the percentage is 8.0. None of these distinct groups travelled (i.e. emigrated) significantly more or less to the Netherlands than the Surinamese population as a whole (Table 2). Analysis of these percentages per sex (male/female patients and male/female emigrants) did not yield significant differences.

Comparing the groups by their chances per person-year we found a mean number of years of 4.4 left to emigrate during the research period after diagnostic contact among all subjects. The percentage of emigration in person-years then is 1.43 emigrants per 100 person-years. For the population in general we found 1.37 emigrants per 100 person-years, a non-significant difference. Thus, when we assume that people leave Surinam only after a visit to the psychiatrist, we cannot find a difference between the population in general and the patients.

Between 1984 and 1990, 28 458 Surinamese of ≥ 15 years emigrated to the Netherlands (Central Bureau for Statistics, 1995). No exact data are available about the number of inhabitants in Surinam in those years with the same age criterion. Yet, at the census in Surinam in 1980, 40% of the population turned out to be younger than 15 years. At earlier censuses that percentage was even higher (Central Population Bureau, 1997). Using this 40% statistic, an age-corrected emigration percentage was estimated to be 12.1%. In comparison with the Surinamese population of ≥ 15 years the patients sample

emigrated less ($\chi^2(1) = 5.53$; $P = 0.02$). Dividing the patient sample according to diagnosis or treatment setting the same result applies to the groups of patients with schizophrenia and in-patients ($\chi^2(1) = 4.69$; $P = 0.03$ respectively, $\chi^2(1) = 4.98$; $P = 0.03$).

Only five (2.9%) of the 11 travellers ($N = 174$) reported to have left as emigrants, registered by the CBS. Considering this percentage (2.9) as the emigration percentage that should be compared with the CBS emigration percentage for the population in general, patients emigrate significantly less than the Surinamese population ($\chi^2(1) = 8.99$; $P = 0.003$).

Remigration

In the period 1984–1990, 11 541 Surinamese remigrated to Surinam (Central Bureau for Statistics, 1995). In proportion to the emigration during that period (37 369), that represents 30.9%. In the same period, eight out of 11 emigrated patients (72.7%) remigrated to Surinam. Clearly, patients were more likely to remigrate ($\chi^2(1) = 9.02$; $P = 0.003$).

DISCUSSION

This study shows that a random sample of Surinamese patients suffering from schizophrenia or psychosis NOS did not emigrate more to the Netherlands than the general Surinamese population. Even when the subjects were analysed separately as in-patients and out-patients, or as patients with schizophrenia or psychosis NOS, these patient groups do not emigrate more often than the general population. The pattern of findings did not change when

males and females were analysed separately, or when using person-years or an age corrected emigration percentage.

We investigated the possible influence of migration rates on admission rates for schizophrenia. However, this study can not tackle the idea that some Surinamese come into contact with health care in the Netherlands without any contact with psychiatry in Surinam before or after emigration. After informative conversations with Surinamese caregivers in Surinam that does not seem likely. Yet it deserves future investigation. However, a change of results seems unlikely since we did accept cases that emigrated before contact with psychiatric services, during a period of 7 years. As a result of this strategy, future patients with schizophrenia who would come into contact with psychiatry are included in our sample.

In most patients sufficient criteria for schizophrenia were found. Others were diagnosed suffering from psychosis, but not further categorized. Estimating their symptoms we considered them as having a great chance of being diagnosed as patients with schizophrenia in the following years. On the other hand recurrent psychoses of short duration with a good prognosis are more likely among Afro-Caribbeans. Syndromes like the non-affective acute remitting psychosis (NARP) (Manton *et al.* 1994; Susser & Wanderling, 1994) can be included in our sample.

No formal diagnostic procedures were used in the selection procedure. Although patient files were selected on the basis of diagnosis and examined for symptoms and diagnosis by an experienced diagnostician potential bias arising from this procedure cannot be excluded.

It is unclear what percentage of individuals with psychosis in Surinam comes into contact with psychiatric services. It is therefore unclear to what extent the patient group represents all individuals with schizophrenia in Surinam. However, most psychotic Surinamese come into contact with psychiatric services, because there is a well-known and clearly functioning mental health care system connected with only one psychiatric hospital situated in the area where almost all Surinamese live. Also outside this area there is a well functioning health care system referring serious disorders to the hospital. It is possible that our findings are influenced by

age differences in migration. Nevertheless, mean ages of migrants and patients suggest that this is not the case.

Among the patients who travelled to the Netherlands some might have reasons to keep outside the Netherlands government statistics. To assess the possible effect of this subgroup on the results of our study we calculated emigration percentages for both groups which we could identify on the basis of the patients narrative. First, all travellers were regarded as emigrants, because information about their registration can be unreliable when collected a few years later. Secondly, we regarded our information as reliable and we calculated an emigration percentage that excluded those travellers who told us that they were not registered as emigrants. Based on this information patients emigrate even less than the Surinamese population.

The emigrated patients remigrate significantly more often than the general Surinamese population. The remigration rate of all remigrating Surinamese includes people who emigrated before 1984, while all patient remigrants emigrated between 1984 and 1990. Thus, the remigration percentage of the Surinamese population is relatively overrated.

Patients who need in-patient treatment are generally in a worse psychiatric condition than patients who (initially) can be treated as out-patients. Similarly, patients with a diagnosis of schizophrenia tend to show more distinct and more serious symptoms of their disease than patients with psychosis, not (yet) diagnosed as patients with schizophrenia. Patients in a better psychiatric condition seem to emigrate more than those suffering from more serious psychiatric symptoms. Most probably the latter are more disabled by their illness and therefore less capable of preparing a new life in another country. Due to their disability they probably also lack financial means, as well as social support. The differences between the groups of patients mentioned only indicate a trend. In general, patients probably lack the possibilities to organize complex tasks because of negative symptoms.

In conclusion, patients with schizophrenia and patients with symptoms of psychosis NOS do not appear to emigrate to the Netherlands more often than the Surinamese population in general. Surinamese patients remigrate more

often. Our data and analyses suggest that high hospital admission rates for schizophrenia among Surinamese in the Netherlands can not be explained by the assumption that sick people suffering from psychotic symptoms or even with a diagnosis of schizophrenia are more likely to emigrate.

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REFERENCES

- Amador, W. F., Kirkpatrick, B., Buchanan, R. W., Carpenter, W. T., Marcinko, L. & Yale, S. A. (1999). Stability of the diagnosis of deficit syndrome in schizophrenia. *American Journal of Psychiatry* **156**, 637–639.
- Bogers, J. (1996). De incidentie voor schizofrenie bij de Afro-Caribische bevolking in Europa. (The incidence of schizophrenia in the Afro-Caribbean population in Europe). *Praecox Periodical Psychiatric Centre Vogelenzang* **5**, 37–43.
- Bogers, J. P. A. M. & de Jong, J. T. V. M. (1998). Hoge frequentie van opname wegens schizofrenie bij Surinamers in Nederland niet veroorzaakt door meer immigratie van (pre)schizofrene patiënten (High admission rates for schizophrenia among Surinamese in the Netherlands not caused by high immigration rates of (pre)schizophrenic patients). *Nederlands Tijdschrift voor Geneeskunde* **142**, 464–468.
- Bhugra, D., Leff, J., Mallett, R., Der, G., Corridan, B. & Rudge, S. (1997). Incidence and outcome of schizophrenia in Whites, African-Caribbeans and Asians in London. *Psychological Medicine* **27**, 791–798.
- Central Bureau for Statistics (CBS) (1995). Buitenlandse migratie van personen met geboorteland Suriname naar geslacht en leeftijd op 31 december van de jaren 1984–1990 (Foreign migration of native Surinamese after gender and age on 31 December of the years 1984–1990). CBS: Voorburg.
- Central Population Bureau (CBB) (1996). Mid-year-cijfers van het aantal inwoners van Suriname van de jaren 1984–1990 (Mid-year-rates of the number of inhabitants of Surinam of the years 1984–1990) CBB: Paramaribo.
- Central Population Bureau (CBB) (1997). Bevolkingsstatistieken; 5e algemene volkstelling 1980 (Population Statistics: 5th General Census 1980). Embassy of Surinam: The Hague.
- Chen, Y. R., Swann, A. C. & Burt, D. B. (1996). Stability of diagnosis in schizophrenia. *American Journal of Psychiatry* **153**, 682–686.
- Cochrane, R. & Bal, S. S. (1987). Migration and schizophrenia: an examination of five hypotheses. *Social Psychiatry* **22**, 181–191.
- Eagles, J. M. (1995). Psychotic illness in ethnic groups. Biological is not synonymous with genetic. *British Medical Journal* **310**, 332.
- Eaton, W. W. (1985). Epidemiology of schizophrenia. *Epidemiologic Reviews* **7**, 105–126.
- Fernando, S. (1991). *Mental Health, Race and Culture*. McMillan: London.
- Harrison, G. (1990). Searching for the causes of schizophrenia: the role of migrant studies. *Schizophrenia Bulletin* **16**, 663–671.
- Harrison, G., Glazebrook, C., Brewin, J., Cantwell, R., Dalkin, T., Fox, R., Jones, P. & Medley, I. (1997). Increased incidence of psychotic disorders in migrants from the Caribbean to the United Kingdom. *Psychological Medicine* **27**, 799–806.
- King, M., Coker, E., Levey, G., Hoare, A. & Johnson-Sabine, E. (1994). Incidence of psychotic illness in London: comparison of ethnic groups. *British Medical Journal* **309**, 1115–1119.
- Kleinman, A. (1988). *Rethinking Psychiatry*. Free Press: New York.
- McGovern, D. & Cope, R. (1991). Second generation Afro-Caribbeans and young whites with a first admission diagnosis of schizophrenia. *Social Psychiatry and Psychiatric Epidemiology* **26**, 95–99.
- Manton, K. G., Korten, A., Woodbury, M. A., Anker, M. & Jablensky, A. (1994). Symptom profiles of psychiatric disorders based on graded disease classes: an illustration using data from the WHO International Pilot Study of Schizophrenia. *Psychological Medicine* **24**, 133–144.
- Ødegård, O. (1932). Emigration and insanity: a study of mental disease among Norwegian-born population in Minnesota. *Acta Psychiatrica et Neurologica Scandinavica* **7** (suppl 4), 1–206.
- Penninx, R. (1996). De Nederlandse samenleving en haar immigranten (Dutch society and its immigrants) In *Transculturele Psychiatrie en Psychotherapie (Transcultural Psychiatry and Psychotherapy)* (ed. J. de Jong & M. van den Berg), pp. 11–20. Swets & Zeitlinger: Lisse.
- Selten, J. P. & Sijben, N. (1994). First admission rates for schizophrenia in immigrants to the Netherlands; the Dutch national register. *Social Psychiatry and Epidemiology* **29**, 71–77.
- Selten, J. P., Slaets, J. P. J. & Kahn, R. S. (1997). Schizophrenia in Surinamese and Dutch Antillean immigrants to the Netherlands: evidence of an increased incidence. *Psychological Medicine* **27**, 807–811.
- Susser, E. & Wanderling, J. (1994). Epidemiology of non-affective acute remitting psychosis versus schizophrenia. Sex and socio-cultural setting. *Archives of General Psychiatry* **51**, 294–301.
- Thomas, C. S., Stone, K., Osborn, C., Thomas, P. F. & Fisher, M. (1993). Psychiatric morbidity and compulsory admission among UK-born Europeans, Afro-Caribbeans and Asians in central Manchester. *British Journal of Psychiatry* **163**, 91–99.
- van Os, J., Castle, D. J., Takei, N., Der, G. & Murray, R. M. (1996). Psychotic illness in ethnic minorities: clarification from the 1991 census. *Psychological Medicine* **26**, 203–208.
- Wessely, S., Castle, D., Der, G. & Murray, R. (1991). Schizophrenia and Afro-Caribbeans. A case-control study. *British Journal of Psychiatry* **159**, 795–801.