Care of schizophrenia in general practice: the general practitioner and the patient

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SUMMARY

Background. *The transfer of patients with chronic schizophrenia from large mental hospitals into the community has had an impact on the role of the general practitioner in the effective delivery of primary care services to these patients.*

Aim. *A study was undertaken to assess the care available in general practice for patients with schizophrenia, the attitudes of general practitioners and patients to the care provided and the factors influencing patients' use of services.*

Method. *Eighty three patients with a diagnosis of schizophrenia and 26 doctors in 13 London practices registered on the VAMP research bank took part in a series of structured and semi-structured interviews. This was followed by a systematic examination of the patients' case notes.*

Results. *Only 14 patients (17%) had no active symptoms according to the present state examination interview and 52 (63%) were currently taking antipsychotic medication. Fifty three patients were in contact with a psychiatrist. Approximately one quarter of patients were visited by a community psychiatric nurse; in 18 of these 19 cases, the main reason for contact was reported to be for administration of medication by depot injection. In all but one case, patients seeing a community psychiatric nurse were also being seen by a psychiatrist. Sixteen doctors reported having had a consultation in the previous month with a patient's relative, friend or member of hostel staff. There were considerable differences between patients and their doctors in their attitudes to the use of services. Of the 26 general practitioners, 23 were enthusiastic about the possibility of introducing shared care records. Of the 54 patients in contact with a mental health professional, only 18 favoured the use of shared care records. Most of the doctors (19, 73%) reported they would welcome a psychiatric liaison service in their practice; 40% of 53 patients said they would not. Patients receiving antipsychotic drugs and patients registered with inner city practices attended their general practitioners more frequently than those not taking antipsychotic medication and those registered with suburban practices. Use of antipsychotic medication (adjusted odds ratio (OR) 8.2, 95% confidence interval (CI) 2.2 to 30.7, P<0.01), male sex (OR 5.8, 95% CI 1.5 to 22.1, P<0.01) and active symptoms on the present state examination (OR 4.1, 95% CI 1.0 to 17.5, P=0.06) were all predictive of current contact with mental health professionals.*

Conclusion. *Family doctors were closely involved with the care of patients with schizophrenia and their relatives and were eager for increased liaison with secondary care services. Although patients were more resistant than doctors to management innovations this may reflect lack of familiarity with changes in community services. Greater input is needed by mental health professionals, particularly community psychiatric nurses, and some consideration of the burden of care in inner city practices is necessary in health service planning.*

Keywords: schizophrenia; community mental health care; general practitioner services; doctors' attitudes; patients' attitudes.

Introduction

THE transfer of care of patients with chronic schizophrenia from large mental hospitals into the community has had important implications for general practitioner services.[1] Many patients with chronic psychoses, most of whom have schizophrenia, now live in private accommodation, hostels or group homes and have immediate access to general practitioners.[2] Up to one quarter of general practitioners have noticed an increase in their workload as a result of the discharge of patients with long-term mental illness from psychiatric hospitals.[3] Nevertheless, little is known about the characteristics of patients with schizophrenia who present in general practice or how the doctor responds to their needs. Even in the early days of community care in the United Kingdom it was reported that the main responsibility for day-to-day management of patients with schizophrenia rested with the general practitioner.[4] Although it appears that doctors prefer to deal with physical rather than psychological complaints,[3] patients (particularly those with schizophrenia) may not be capable of differentiating between the general practitioner and mental health specialist.[5]

In order to plan effective primary care services for those with long-term mental illness, it is necessary to assess current management offered by general practitioners in relation to the clinical and social characteristics of patients, and the attitudes of both doctors and patients to the care currently available. The aims of this study were to assess: the care available in general practice for patients with schizophrenia; the attitudes of general practitioners and patients to the care provided; and factors influencing patients' use of services.

Method

Practices

Almost one third of general practices in the UK use the VAMP computer system for their medical records. Until October 1990, one in three of these practices maintained records to the research standards required by the VAMP research bank.[6] Practices registered on the VAMP research bank were representative of those nationwide with respect to their urban–rural distribution, list sizes, patterns of morbidity and the age and sex distribution of both patients and general practitioners.[7] All 16 London general practices fulfilling the required validation standards of the VAMP research bank between April and September 1990 were invited to participate in the study. Further details of the VAMP research bank and the sampling procedure are reported elsewhere.[8]

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There are no absolute criteria for deciding on the level of urbanization of a practice area, nor is it possible to assign an underprivileged area score[9] for each practice. Therefore, indicators such as level of industrialization and commercialization were used to determine which practices were inner city and which were suburban.

Patients

All patients with a diagnosis of schizophrenia entered on computer were identified in each of the study practices. The sensitivity and positive predictive value of the computer diagnosis of schizophrenia were 88% and 71%, respectively. The specificity and negative predictive value were both at least 99.9%. In general, the recording of psychotic illness on the general practice computers in this group of VAMP practices was accurate and complete.[8]

In each of the participating practices, a one in two random sample of patients was selected for interview by S D. The interview was conducted either at the practice or at the patient's home. Data were collected during the interview and from patients' medical notes.

Sociodemographic details. Details of each patient were collected by means of a structured interview designed in a previous community survey of patients with schizophrenia.[10]

Psychiatric state. This was evaluated using the present state examination, ninth edition.[11] Information on symptoms present in the previous month was entered onto the *CATEGO* computer programme in order to generate a present state examination class and a diagnosis according to the *International classification of diseases,* ninth revision.[12]

Use of medical services. Use of and attitudes towards services provided by the general practitioner, psychiatrist, community psychiatric nurse and social worker were explored in an interview schedule designed by the authors. It was necessary to develop this schedule for the purposes of the study as schedules available for needs assessments of chronically mentally ill patients[13] do not focus on general practice.

Clinical information. Clinical information collected from the case notes was used to establish a life-time diagnosis according to at least one of the three following diagnostic criteria:[14] the American *Diagnostic manual and statistical manual of mental disorders* third edition, revised,[15] the *International classification of diseases,* ninth revision[12] or the syndrome check list derived from the present state examination.[11] The syndrome check list enables recording of important symptoms from case notes in order to make a retrospective diagnosis.

Attendance rates. The median and mean number of contacts made with the general practitioner by each patient each year was calculated from a count of the total number of attendances at the surgery over the previous four years.[14]

General practitioners

Each general practitioner was asked to take part in a semi-structured interview adapted from a format used to collect information on management of human immunodeficiency virus (HIV) infection in general practice.[16] Information was collected on their experience of psychiatry; their use of secondary services and voluntary agencies; the nature of recent consultations with patients, carers and families; their attitudes to patients with chronic psychoses; and their views on recent management innovations in the care of patients with schizophrenia in the community. These interviews were conducted by I N.

Analysis

Univariate comparisons were tested applying the chi square statistic for categorical variables, and Student's *t*-test and Mann Whitney *U* tests for continuous variables. Multivariate analyses were used to explore factors influencing general practice annual consultation rates and contact with mental health professionals. Multiple regression was used where the dependent variable was continuous, and logistic regression where it was categorical.

Results

Practices

Thirteen of the 16 London practices on the VAMP research bank agreed to take part in the study. The 13 practices participating in the study were from five London family health services authorities. The general practitioners in the three practices not participating in the study were overwhelmed by the changes brought about by the 1990 contract for general practitioners and had little desire to be engaged in any new activity and hence declined to be involved in the study.

Eight of the practices were located in the inner city and five were suburban. For example, Kings Cross was considered inner city and Kingsbury suburban. The eight inner city practices taking part in the study comprised three single-handed practices, three two-partner practices, one three-partner and one four-partner practice. The five suburban practices comprised one single-handed practice, two two-partner and two five-partner practices. The total list size of the inner city practices was 34 000 patients, and of the suburban practices was 38 000 patients.

Patients

Sociodemographic details. A total of 212 patients with a computer diagnosis of schizophrenia were identified in the 13 practices, of whom 106 were randomly selected for interview. Of the 106 patients, three had died, six had moved away, 10 were not traceable and four refused to take part.

The 83 patients who were interviewed (78%) did not differ significantly in terms of age, sex, marital status or country of birth from the total population of 212 patients. The sociodemographic details of the 83 patients who were interviewed are shown in Table 1. Their mean age was 50 years (range 23 to 81 years). Thirty patients (36%) lived alone and 30 (36%) lived with relatives who in 20 cases were spouses or partners. Fifty two of the 83 patients (63%) were taking antipsychotic medication.

Psychiatric state. A retrospective diagnosis based on information in the case notes confirmed that 71 patients (86%) had a life-time diagnosis of schizophrenia according to at least one of the three diagnostic criteria. According to the present state examination 14 patients (17%) had no symptoms and 32 (39%) scored at or above the threshold level of psychiatric pathology which constitutes the minimum basis for classification into one of the diagnostic categories of functional psychosis or neurosis. The other 37 patients had psychiatric symptoms but since they were below the threshold level they could not be classified into any of the diagnoses of functional psychosis or neurosis. Seventy three patients had a history of active illness in the last four years.

Use of medical services. Twenty two patients (27%) reported seeing their general practitioner up to once a month. Eleven (13%) saw their doctor between once a month and more than once every three months, 34 (41%) saw their doctor once every three months or less frequently, and 16 (19%) reported hardly ever seeing their general practitioner. Fifty three patients (64%) were in contact with psychiatrists, two of these patients were inpatients. Twelve patients (14%) reported seeing the psychiatrist

Table 1. Sociodemographic details of the interviewed patients who had a computer diagnosis of schizophrenia.

	% of 83 patients
Men	*54*
Women	*46*
Marital status	
Single	*51*
Cohabiting	*17*
Separated/divorced	*17*
Widowed	*8*
Married	*7*
Country of birth	
UK	*66*
Eire	*12*
West Indies	*12*
Africa	*4*
Other	*6*
Accommodation	
Council	*36*
Privately owned/rented	*36*
Hostel	*25*
Hospital inpatient	*2*
Daytime activities	
No daytime occupation	*43*
Day centre/luncheon club	*30*
Part/full-time employment	*16*
Retired	*5*
Other	*6*

up to once a month and 37 (45%) reported seeing the psychiatrist between once a month and more than once every three months (four patients could not estimate their frequency of contact with a psychiatrist). Of 19 patients (23%) in contact with a community psychiatric nurse, 10 were visited in their own homes. In all but one case, patients stated that contact with the nurse was primarily for administration of antipsychotic medication by depot injection. Eighteen patients reported seeing the community psychiatric nurse up to once a month, and the other patient reported seeing the nurse monthly to more than every three months. In all but one case, patients seeing a community psychiatric nurse were also being seen by a psychiatrist.

Eight patients were in touch with social workers (10%). Eleven patients (13%) were in current contact with non-statutory bodies such as voluntary agencies, counselling organizations or religious groups.

Attendance rates. Based on information collected from the case notes, the median number of contacts per year with the general practitioner (excluding consultations for repeat prescriptions) was 6.4 (mean 7.4 consultations, standard deviation (SD) 5.7, 10th centile two, 90th centile 15.5). Details of the types of consultations have been described elsewhere.[14]

General practitioners

Thirty one posts were available for general practitioners in the 13 practices but only 28 were filled at the time of the study (three were in the process of recruitment). The mean list size of the 31 general practitioners was 2322 patients. Twenty six doctors agreed to be interviewed; one refused and one was absent on long leave. Sixteen of the general practitioners interviewed were men. The mean age of all 26 doctors was 42 years (SD 8.8 years). The mean length of time since registration was 16 years (SD 7.6 years) and they had spent a mean of 12 years (SD 7.6 years) in general practice. Eight general practitioners had had six months psychiatry experience as junior doctors. Three doctors were part-time lecturers and four were general practitioner trainers.

Services available in general practice

Where possible, doctors' and patients' attitudes to services are presented together in order to draw comparisons between them.

Reasons for consultation, and management. Although the doctors usually referred all patients with a new-onset psychosis for specialist assessment and advice, five general practitioners reported that they treated at least a quarter of such patients on first encounter. Twenty one of the 26 doctors had seen patients with schizophrenia in the month before the interview, of whom 14 had seen at least one patient in the preceding week.

In answer to an open question, the main reasons given by the 21 doctors for the most recent consultation with a patient with schizophrenia were for the patients' psychological needs (eight doctors), physical problems (five), medication issues (five) and social consultations (four); one doctor gave two reasons. Medical certification (mentioned by seven doctors), administration of drugs by depot injection (four) and general advice and counselling (seven) were the most common actions taken by the doctor. Four doctors reported carrying out a review of a patient's mental state in their last consultation. Four doctors had referred a patient to hospital for further care.

Patients' main reasons for their most recent consultation with the general practitioner were for help with physical complaints (36 patients, 43%) and for a prescription (22, 27%). Less commonly, consultations were reported to be for medical certification (eight patients, 10%), psychiatric problems (seven, 8%) and for antipsychotic medication by depot injection (five, 6%) (five patients could not describe the reason for their most recent visit).

Carers and relatives. Sixteen practitioners reported having had consultations in the preceding month with patients' relatives, close friends or hostel staff. In 12 instances, anxiety about the patient's psychiatric state was the reason for attendance; the remainder consulted to discuss their own emotional problems or family difficulties resulting from the patient's condition.

Patients' need for contact with health professionals. On the whole, the doctors were consistent in their views about the level of care they and the community psychiatric nurses should provide to their patients with schizophrenia but were less uniform in their views regarding contact with other professionals (Table 2).

Seventy three patients (88%) reported a continuing need for contact with their general practitioner. Forty two of the 73 patients with a history of active illness in the last four years (58%) expressed a current need to see a psychiatrist and 31 (42%) the need for contact with a community psychiatric nurse.

Shared care records. Twenty three general practitioners were enthusiastic about the possibility of introducing shared care records modelled on those used in antenatal care but 13

Table 2. Professional contact perceived necessary by the general practitioners for patients with schizophrenia.

Professional	% of 26 GPs considering contact with professional required			% of 26 GPs considering no contact necessary
	Only when necessary	Up to 3-monthly	Up to 6-monthly	
GP	*27*	*65*	*4*	*4*
Community psychiatric nurse	*31*	*69*	*0*	*0*
Psychiatrist	*42*	*8*	*38*	*12*
Social worker[a]	*54*	*19*	*8*	*12*
Counsellor[a]	*42*	*8*	*0*	*42*

[a]Data missing for two general practitioners.

expressed doubts that patients would bring the card to each contact with a professional.

Of the 54 patients currently in contact with a mental health professional, 18 favoured the use of a shared care record (33%), nine were prepared to try out the idea (17%), 16 were not in favour (30%) and 10 were undecided (19%).

Location of the psychiatric service. Although 19 doctors reported that they would welcome a psychiatric liaison service in their practice, only one practice (single-handed) had a visiting liaison psychiatrist.

Four of the 53 patients in contact with psychiatrists (8%) were dissatisfied with the setting in which they currently saw their consultant and 21 (40%) were opposed to visiting the psychiatrist in their general practitioner's surgery. The principal reasons for this opposition were a concern that other general practice attenders might realize they were seeing a psychiatrist, a desire to remain in contact with a hospital service and a wish for their psychiatric care to remain separate from their general practice care.

Predictors of level and type of care

A search was made for independent predictors of schizophrenic patients' annual consultation rates at the general practice over the preceding four years, and schizophrenic patients' current contact with a psychiatrist or community psychiatric nurse. The factors considered most likely to influence use of general practitioner services and of mental health professional services were selected. Patient factors comprised increasing age, being a man, living alone, presence of symptoms on the present state examination, treatment with antipsychotic drugs as recorded in the notes and (for predictors of annual consultation rate) contact with mental health professionals. General practice factors comprised inner city location, being in a group practice, the doctor having received at least six months of hospital psychiatry training and the doctor favouring regular psychiatrist review of patients.

Factors influencing practice attendance rates. Univariate analysis revealed a trend for patients on antipsychotic medication to attend their general practitioners more frequently than those not on antipsychotic medication (Mann Whitney $U = 461.5$, $Z = -1.72$, $P = 0.09$). There was also a trend for those on the lists of inner city practices to attend their general practitioners more frequently than those in suburban practices (Mann Whitney $U = 456.5$, $Z = -1.93$, $P = 0.054$).

On multiple regression, current treatment with antipsychotic medication was independently predictive of annual attendance rate (regression coefficient $B = 4.06$, 95% confidence interval = 0.8 to 7.3, $P<0.05$) although it explained only 4% of the variance in attendance rate.

Factors influencing contact with mental health professionals. When the univariate predictors, together with age, were adjusted for in a multiple logistic regression, there was little change in the odds ratios obtained (Table 3). Use of antipsychotic drugs, male sex and active symptoms on the present state examination ($P = 0.06$) were all predictive of current contact with mental health professionals.

Table 3. Results of multiple regression analysis showing factors predicting contact with mental health professionals.

Factors	Odds ratio (95% CI)	
	Without adjustments	With adjustments
Patient on antipsychotic therapy	13.1 (4.2 to 40.6)***	8.2 (2.2 to 30.7)**
Male patient	6.8 (2.5 to 19.1)***	5.8 (1.5 to 22.1)**
Patient has active symptoms on PSE	3.8 (1.3 to 11.6)**	4.1 (1.0 to 17.5)
GP had 6 months psychiatry training	3.7 (1.0 to 13.8)*	2.2 (0.1 to 48.5)
GP favours regular psychiatric contact	2.4 (0.9 to 6.4)	1.4 (0.3 to 7.3)
Patient in group practice	1.7 (0.7 to 4.6)	0.7 (0.2 to 2.9)
Patient living alone	1.0 (0.4 to 2.5)	1.0 (0.3 to 3.5)
Patient in inner city practice	0.4 (0.1 to 1.2)	0.5 (0.1 to 6.3)

CI = confidence interval. PSE = present state examination. *$P<0.05$, **$P<0.01$, ***$P<0.001$.

Discussion

This is thought to be the first study of the management of patients with schizophrenia in general practice that takes account of the views of patients and their doctors.

The method of ascertainment fails to include patients who were homeless or not registered with a general practitioner.[17] Nevertheless, the level of psychopathology found (39% of patients had active psychiatric symptoms as measured on the present state examination) is similar to that reported from long-term follow-up studies of patients treated in hospital.[18] It is lower than that found in community surveys in which patients are enlisted from a wide range of services. In a survey of all patients with schizophrenia in one inner London health district[10] two thirds of patients were reported to be actively psychotic compared with two fifths in this study. One explanation for this difference may be that patients with less severe psychopathology maintain contact with their general practitioner over the longer term; a less likely alternative is that patients who are registered with general practitioners have a better clinical and social outcome.

There were considerable differences between patients and their doctors in their attitudes to the use of services. Patients' relative lack of enthusiasm for the use of shared care records or an expansion of liaison clinics in general practice may reflect resistance to change. In one study patients referred to a psychiatric outpatient department or to a neighbouring general practice liaison clinic were asked where they would prefer to see the psychiatrist; most tended to choose the service they were currently receiving.[19] Seeing a psychiatrist in the primary care setting or use of shared care cards may imply seeing the psychiatrist more often. Forty two per cent of patients with a history of active symptoms in the last four years as measured by the present state examination stated that they did not need contact with a psychiatrist. Consultation services run by psychiatrists in general practice are expanding[20] and are generally welcomed by family doctors.[21] However, in the development of such services, one must be sensitive to patients' expressed needs.

Although previous reports have indicated that London general practitioners regard community psychiatric nurses as the most appropriate professional to act as case manager,[3] it would seem from the present results that patients did not particularly appreciate their input. This may simply reflect a lack of familiarity with the skills of these professionals or that their care was often limited to the provision of medication by depot injection. Insufficient numbers of community psychiatric nurses are accessible to patients with chronic psychotic disorders. Nurses have been criticized for abandoning the care of patients with chronic mental illness in favour of psychotherapeutic interventions for patients with neurotic and social difficulties.[22,23] This may be because of the priorities of general practitioners who refer patients, more effective help-seeking by those with minor psychiatric disorder,

insufficient numbers of nurses or the interests of the nurses themselves. Community psychiatric nurses will need to be more consistently involved with patients with chronic mental illness if they are to take up the role of case manager.[24]

Patients' carers and relatives were often in touch with the general practitioners. People frequently suffer emotional and social problems as a result of caring for someone with a chronic mental illness.[25] Although consultations by carers and relatives may result in a greater workload for general practitioners, they also provide an opportunity for family interventions which have proved effective in the management of patients who are chronically mentally ill.[26]

Patients in contact with psychiatrists and community psychiatric nurses were more likely than those not in contact with these mental health professionals to have current symptoms and to be taking antipsychotic medication. However, taking antipsychotic medication was also linked with patients visiting their general practitioner more often, possibly to receive prescriptions.[27] Irrespective of current symptomatology, men were more likely than women to be in contact with a mental health professional, supporting recent evidence that the social impact of schizophrenia on men is greater, and that women may have a better prognosis.[28] As previously reported, the prevalence of schizophrenia is higher in populations living in the inner cities.[10] Results presented here also indicate a trend for patients registered with these practices to consult more often than those registered with suburban practices. Patients with schizophrenia may drift into the inner city[29] or inner city environments may lead to higher rates of schizophrenia.[30] Whatever the reason for this urban concentration, the workload for inner city family doctors is higher and needs some consideration in health service planning.

The 13 practices closely represented the five London family health services authorities to which they belonged. The mean list size of the 31 general practitioner principals matched the mean of the five family health services authorities. The proportions of practices with different numbers of practice partners broadly matched those in the family health services authorities as a whole. The practices used in this study were therefore representative of London general practice although they compare less well with regional and national figures.[31]

General practitioners are closely involved with the care of patients with schizophrenia and their relatives and are eager for increased liaison with secondary care services. Although patients are more resistant to management innovations this may reflect lack of familiarity with changes in community services. Greater input is needed by mental health professionals, particularly community psychiatric nurses, and some consideration of the burden of care in inner city practices is necessary in health service planning.

References

1. Kendell R. The future of Britain's mental hospitals. *BMJ* 1989; **299:** 1237-1238.
2. Anderson J, Dayson D, Wills W, *et al.* The TAPS project. 13: clinical and social outcomes of longstay psychiatric patients after one year in the community. *Br J Psychiatry* 1993; **19:** 45-56.
3. Kendrick T, Sibbald B, Burns T, Freeling P. Role of general practitioners in care of long term mentally ill patients. *BMJ* 1991; **302:** 508-510.
4. Parkes CM, Brown GW, Monck EM. The general practitioner and the schizophrenic patient. *BMJ* 1962; **1:** 972-976.
5. Horder E. Care for patients discharged from psychiatric hospital [editorial]. *Br J Gen Pract* 1991; **41:** 399-400.
6. Pringle M. The new agenda for general practice computing. *BMJ* 1990; **301:** 827-828.
7. Mann RD, Hall G, Chukwujindu J. Research implications of computerised primary care. *Postmarketing Surveillance* 1992; **5:** 259-268.
8. Nazareth I, King M, Haines A, *et al.* Accuracy of diagnosis of psychosis entered on a general practice computer system. *BMJ* 1993; **307:** 32-34.
9. Jarman B. Underprivileged areas: validation and distribution of scores. *BMJ* 1984; **289:** 1587-1592.
10. Campbell PG, Taylor J, Pantelis C, Harvey C. Studies of schizophrenia in a large mental hospital proposed for closure, and in two halves of an inner London borough served by the hospital. In: Weller M (ed). *International perspectives in schizophrenia: biological, social and epidemiological findings.* London: John Libbey, 1989.
11. Wing JK, Cooper JE, Sartorius N. *Measurement and classification of psychiatric symptoms.* Cambridge University Press, 1974.
12. World Health Organization. *Mental disorders: glossary and guide to their classification in accordance with the ninth revision of the International classification of diseases.* Geneva, Switzerland: WHO, 1978.
13. Brewin CR, Wing JK, Mangen SP, *et al.* Principles and practice of measuring needs in the long term mentally ill: the MRC needs care assessment. *Psychol Med* 1988; **17:** 971-981.
14. Nazareth I, King M, Haines A, *et al.* Care of schizophrenia in general practice: a case control study. *BMJ* 1993; **307:** 910.
15. American Psychiatric Association. *Diagnostic manual and statistical manual of mental disorders.* Third edition, revised. Washington, DC: APA, 1987.
16. King MB. Psychological and social problems in HIV infection: interviews with general practitioners in London. *BMJ* 1989; **299:** 713-717.
17. Weller MPI, Toblansky R, Hollander D. Destitution in the festive season. *Lancet* 1989; **2:** 220.
18. Johnstone EC. Disabilities and circumstances of schizophrenic patients — follow-up study. *Br J Psychiatry* 1991; 159 suppl 13.
19. Strathdee G, King MB, Araya R, Lewis S. A standardised assessment of patients referred to primary care and hospital psychiatric clinics. *Psychol Med* 1990; **20:** 219-224.
20. Pullen EM, Yellowlees A. Scottish psychiatrists in primary health care settings: a silent majority. *Br J Psychiatry* 1988; **153:** 663-666.
21. Brown LM, Tower JEC. Psychiatrists in primary care: would general practitioners welcome them? *Br J Gen Pract* 1990; **40:** 369-371.
22. Briscoe M, Wilkinson G. General practitioners' use of community psychiatric nursing services: a preliminary survey. *J R Coll Gen Pract* 1989; **39:** 412-414.
23. White E. *The third quinquennial national community psychiatric nursing survey.* Manchester: Department of Nursing, University of Manchester, 1991.
24. Gournay K. The mental health nursing review: implications for community psychiatric nurses. *Psychiatr Bull* 1995; **19:** 217-219.
25. Scottish schizophrenia research group. The Scottish first episode schizophrenia study. IV. Psychiatric and social impact on relatives. *Br J Psychiatry* 1987; **150:** 340-344.
26. Falloon I, Shanahan W, Laporta M, Krekorian HAR. Integrated family, general practice and mental health care in the management of schizophrenia. *J R Soc Med* 1990; **83:** 225-228.
27. Hassall C, Stilwell JA, Family-doctor support for patients on a psychiatric case register. *J R Coll Gen Pract* 1977; **27:** 605-608.
28. Shepherd M, Watt D, Falloon I, Smeeton N. The natural history of schizophrenia: a five year follow up of outcome and prediction in a representative sample of schizophrenics. *J Psychol Med Monogr Suppl* 1989; **15:** 1-45.
29. Faris REL, Dunham HW. *Mental disorder in urban areas.* Chicago, IL: Chicago University Press, 1950.
30. Lewis G, David A, Andreasson S, Allebeck P. Schizophrenia and city life. *Lancet* 1992; **340:** 137-139.
31. Department of Health. *Health and personal social services statistics for England.* London: HMSO, 1992.

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