Psychiatric referral rates and the influence of on-site mental health workers in general practice

Mark Ashworth, Sarah Clement, John Sandhu, Nancy Farley, Ros Ramsay and Teifion Davies

SUMMARY

Psychiatric referral rates vary widely between different general practices. To increase our understanding of this variation, we conducted a one-year prospective observational study of outpatient psychiatric referrals made by all general practices (622 referrals from 29 practices) within the catchment area of one inner-city psychiatric service. Contrary to our hypothesis, practices with higher allocations of on-site mental health workers did not have lower psychiatric referral rates. On the other hand, the highest referring practices had lower mental health worker allocations suggesting a possible influence upon referrals in this subgroup. A wide range of quantitative variables explained very little of the referral rate variation, implying that more subjective factors, such as general practitioner attitudes, may be influential in the decision to refer a patient to the psychiatrist.

Keywords: *psychiatric service, referral rate; mental health workers; general practice.*

M Ashworth, MRCGP, MRCGP, STaRNet lead general practitioner; and S Clement, PhD, STaRNet lecturer, Guy's, King's and St Thomas' Department of General Practice and Primary Care, King's College London. J Sandhu, BSc, information manager, Lambeth, Southwark and Lewisham Health Authority, London. N Farley, RGN, RMN, nurse therapist; R Ramsay, MA, MRCPsych, consultant psychiatrist; and T Davies, PhD, MRCPsych, senior lecturer, Brixton Road Community Mental Health Team, London.

Address for correspondence

Dr Mark Ashworth, Guy's, King's and St Thomas's Department of General Practice and Primary Care, King's College London, 5 Lambeth Walk, London SE11 6SP.

Submitted: 15 December 2000; Editor's response: 12 April 2001; final acceptance: 24 July 2001.

Introduction

PRIMARY care in Britain has experienced a rapid expansion in the availability of practice-based mental health workers (MHWs) usually comprising counsellors, psychologists or psychotherapists. Advocates of this expansion have lacked clear evidence of its effectiveness in reducing use of other aspects of health service provision, such as secondary psychiatric care.[1]

Interpreting the conflicting findings of previous referral studies[2-6] has been hampered by their design. Many involved MHWs not representative of typical modern primary care (such as marriage guidance counsellors or liaison psychiatrists) or failed to control for the number of hours worked by MHWs in primary care.[2-4] None excluded psychotic illness, which would be more appropriately managed by referral to the secondary sector. Finally, previous studies may have been based on falsely low referral rates, since they did not exclude patients who were living outside the psychiatric catchment area but registered with general practitioners (GPs) within the area.

We therefore conducted a prospective observational study addressing the methodological weakness of previous research, to test the hypothesis that practices with a greater allocation of on-site MHWs would have lower psychiatric referral rates for non-psychotic illness.

Method

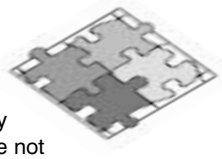
The study took place in the catchment area of a community-based, secondary care psychiatry service covering an inner-city area of south London, during the year April 1998 to March 1999. A total of 79 GPs working in 29 practices were located within the catchment area. A computer mapping package (MapInfo Professional Version 5.5, Mapinfo Corporation) identified 85 900 residents at the outset of the study aged 16 to 64 years who both lived within the catchment area and were registered with a GP within this area.

Using records at the psychiatric service all referrals were counted, the referring practice identified, and the case notes searched to exclude those with a psychiatrist's diagnosis of psychotic illness. Routine practice and census-based data were obtained from the Health Authority and the Prescription Pricing Authority provided antidepressant and benzodiazepine prescribing data in the form of Average Daily Quantities (ADQs) (Table 1).

Results

Twenty-one out of 29 (72%) practices within the catchment area had an on-site MHW, totalling 18 counsellors and 11 psychologists. For those practices with an on-site MHW, the

HOW THIS FITS IN



What do we know?

GP referral rates to psychiatrists vary widely. Psychiatric referral rates have not been shown to be reduced in practices with on-site mental health workers; however, the studies so far have been difficult to interpret.

What does this paper add?

Although no overall relationship between psychiatric referral rates and on-site mental health workers was demonstrated, the highest referring practices had significantly lower mental health worker allocations.

median allocation was 1.6 hours per week per 1000 patients (interquartile range [IQR] = 0.76 to 2.68).

A total of 622 psychiatric referrals were made during the study year (excluding a further 131 referrals with a psychotic illness). The median referral rate for all practices was 7.47 per year, per 1000 patients (IQR = 5.02 to 9.39).

Taken as a whole, there was no significant correlation between psychiatric referral rates for non-psychotic illness and the allocation of MHWs to each practice (Spearman's ρ = -0.22; $P = 0.25$). The lack of a significant correlation was maintained if age adjusted referral rates were used in the equation, if the variables were transformed using natural log values, and if practice list size weightings were applied.

If practices in the highest referring quartile (referral rate greater than 9.39, $n = 7$) or quintile (referral rate greater than 10.95, $n = 6$) were selected, a possible relationship emerges between referral rates and MHW allocations. Using both the quintile and quartile cut-offs for high referral, these practices had significantly lower allocations of on-site MHWs (Mann–Whitney U = 30.0 and 38.0, $P = 0.03$ and 0.04, respectively).

None of the other factors examined was associated with psychiatric referral rates (Table 1).

Discussion

Psychiatric referral rates varied almost tenfold between practices in our inner-city study area. We found no linear relationship between practice psychiatric referral rates and the input of on-site MHWs. However, our *post hoc* analysis suggested that the highest referring practices were likely to have

Table 1. Relationship between psychiatric referral rates and practice, prescribing and census variables

Variable	Range of values	Relationship with referral rate	*P*-value
Single-handed practice	11 out of 29	98.0[a]	0.96
Training practice	6 out of 29	54.0[a]	0.42
Fundholding practice	9 out of 29	81.0[a]	1.00
Number of GPs in partnership	1–8	-0.04[b]	0.82
List per GP	810–2681	-0.19[b]	0.32
Percentage of two-year-olds vaccinated	15.2–98.7	-0.09[b]	0.68
Percentage of five-year-olds vaccinated	9.4–97.9	-0.37[b]	0.08
Percentage cervical smear coverage	22.6–89.8	-0.24[b]	0.26
Antidepressant prescribing volume (ADQs/STAR-PU)	192.6–1003.0	0.02[b]	0.91
Benzodiazepine prescribing volume (ADQs/STAR-PU)	26.4–476.4	-0.12[b]	0.53
Percentage of patients with long-term sickness	10.3–12.8	0.11[b]	0.58
Percentage of patients unemployed	7.2–14.2	-0.10[b]	0.61

[a]Mann-Whitney U; [a]Spearman's rho.

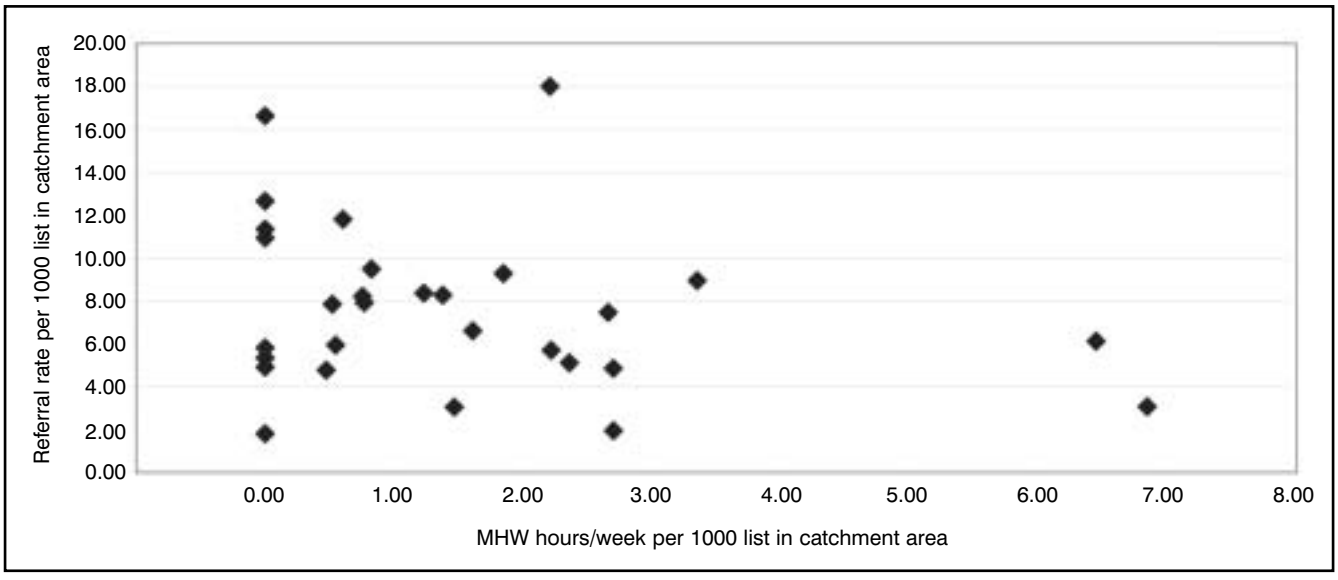


Figure 1. Psychiatric referral rate (non-psychotic illness) and allocation of mental health workers (MHWs).

lower on-site MHW allocations.

Assumptions that high psychiatric referral rates might have been associated with single-handed practice, non-fundholders, high psychotropic prescribing or indicators of poor quality (such as inability to meet cervical smear and vaccine targets) were not borne out by the results. Social deprivation and morbidity factors have previously been shown to influence referral patterns.[7] The lack of such a finding probably arose because of the universally high levels of deprivation in the study area.

Our study has a number of limitations. The study design was uncontrolled, although naturalistic observational studies are sometimes the only means of evaluating effectiveness in a real clinical setting.[5] Caution should be exercised in interpreting the lack of MHWs in high referring practices, particularly since cut-offs for high referral were not defined in advance. This finding may have been causal or, alternatively, high-referring practices may have been less willing to employ MHWs. Any effect of MHWs on referrals may be confined to practices with high levels of MHW input; however, there were few such practices in the study area.

It might appear surprising that referral rates vary so widely between practices and yet a wide range of variables explained little of this variation. The dominant influence on psychiatric referral rates may well be individual GP attitudes, such as the characterisation of GPs into 'conduits' (who merely recognise and refer such cases to 'experts') and 'containers' (who aim to prevent an inappropriate referral burden by offering primary care interventions).[8] Further study could usefully explore the interrelation between GP attitudes to the management of minor psychiatric illness, referral patterns, and the potential of MHWs to reduce these referrals.

Acknowledgements

We would like to thank Professor Tom Craig for invaluable advice at the study design stage of this work and Sally Kerry for help with the initial statistical methods. Deborah Ramdeo obtained the prescribing data and conducted the ADQ calculations. This work was part funded through the STaRNet Research Network by the NHS R&D Directorate, South East and London Regions.

References

1. Bower P, Sibbald B. Systematic review of the effect of on-site mental health professionals on the clinical behaviour of general practitioners. *BMJ* 2000; **320:** 614-617.
2. Creed F, Gowrisunker J, Russell E, Kincey J. General practitioner referral rates to district psychiatry and psychology services. *Br J Gen Pract* 1990; **40:** 450-454.
3. Corney R. Marriage guidance counselling in general practice. *J R Coll Gen Pract* 1986; **36:** 424-426.
4. Catalan J, Gath D, Anastasiades P, *et al*. Evaluation of a brief psychological treatment for emotional disorders in primary care. *Br J Psychiatry* 1997; **170:** 113-119.
5. Baker R, Allen H, Gibson S, *et al*. Evaluation of a primary care counselling service in Dorset. *Br J Gen Pract* 1998; **48:** 1049-1053.
6. Harvey I, Nelson SJ, Lyons RA, *et al*. A randomized controlled trial and economic evaluation of counselling in primary care. *Br J Gen Pract* 1998; **48:** 1043-1048.
7. Melzer D, Watters L, Paykel E, *et al*. Factors explaining the use of psychiatric services by general practices. *Br J Gen Pract* 1999; **49:** 887-891.
8. Nandy S, Chalmers-Watson C, Gantley M, Underwood M. Referral for minor mental illness: a qualitative study. *Br J Gen Pract* 2001; **51:** 461-465.