

GP referral to an eating disorder service: why the wide variation?

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SUMMARY

Background. Early detection and management of patients with eating disorders is thought to improve prognosis, yet little is known about the factors associated with referral of these patients to treatment centres.

Aim. To calculate general practitioner (GP) referral rates to a specialist eating disorder service and determine the association between referral rate and general practice and practitioner factors.

Method. Referral rate was calculated from a database of routine referrals to St George's Hospital Eating Disorder Service from January 1990 to May 1996 and correlated with practice and practitioner details obtained from medical directories and health authority data.

Results. There was a wide variation in referral rates. A higher referral rate was found to be associated with practice size, proximity to the clinic, female GPs, GPs having the MRCGP qualification, being United Kingdom qualified, and offering full contraceptive services. Fundholding was associated with lower rates of referral.

Conclusion. Patients with eating disorders may be at a disadvantage in certain practices. Educational interventions could be targeted towards low referrals.

Keywords: eating disorders; referral rate; education.

Introduction

EATING disorders are among the most common psychiatric disorders in young women.¹ Surveys suggest that 0.1% to 1% of young women suffer from anorexia nervosa,²⁻⁴ and the prevalence of bulimia nervosa in adult women has been estimated to be between 1% and 3%.^{1,5} Partial syndromes may occur in between 1.8% and 5.4% of adult women and up to 13% of adolescent girls.⁶ An average general practitioner (GP) list of approximately 2000 patients may therefore include one patient with anorexia nervosa, up to 20 patients with bulimia nervosa, and 40 patients with partial syndromes.

Around 98% of people are registered with a GP in the United Kingdom (UK) and two-thirds of these attend the surgery in any one year.⁷ Primary care teams have frequent opportunities to detect eating disorders but the shame and denial present in these disorders make detection and treatment difficult. This is unfortu-

nate, since effective cognitive-behavioural and self-help programmes have been devised for use in general practice for patients with binge-eating problems and bulimia nervosa.

Little is known about the factors influencing GP detection and referral of eating disorders. St George's Hospital provides an eating disorder service for patients living in Merton, Sutton, and Wandsworth, through a contractual agreement with the district health authority. GPs can refer directly to the service. This study aimed to determine the association between referral rates to this service and general practice and practitioner factors. Practice organisation, knowledge, and convenience of referral were thought to be relevant factors in the referral process and, consequently, practice size, distance from clinic, fundholding status, and GP qualifications were considered. Since eating disorders occur primarily in young women and are under-recognised in lower social classes, social deprivation indices, the provision of full contraceptive services, and the age and sex of GPs were thought to be potentially relevant.

Method

On referral to the St George's eating disorder service, all patients are sent a pre-assessment questionnaire to complete. On return of this questionnaire, the practice and practitioner details are routinely entered onto a database. This study included patients who were referred between January 1990 and May 1996 and who returned pre-assessment forms.

A list of all practices and practitioners during this time period was obtained from the health authority in order to include practices that had made no referrals. Practices that had only existed for two years or less were excluded from the study, as were GPs who had been practising in the area for less than six months.

To estimate referral rates, practice list sizes were obtained from the health authority for each quarter-year in the study period. Since these data fluctuate over time, a single average list size was calculated for each practice. The list size for patients aged under 65 years was used; the number of women aged between 16 and 40 years, which would have been a preferable denominator, was not available.

Annual practice referral rates were calculated by dividing the number of referrals by the average practice list size, and further dividing by the number of years the practice had been in existence at the time of the study period (to the nearest quarter). To calculate an annual referral rate for each GP, an individual list size was first assigned by multiplying the practice list size by each doctor's proportion of the total whole time equivalent medical staffing of the practice. The number of referrals for each GP was then divided by their individual list size, and further divided by the number of years they had been in the practice at the time of the study period.

General practitioner sex, date of birth, qualifications, and place of primary qualification were obtained from the Medical Directory¹¹ and the Medical Register.¹² These factors were confirmed using health authority data. The health authority also provided data on practice list sizes, number of partners, the presence of female partners, fundholding status, whole time equivalence of GPs, and whether GPs had agreed to provide a full contraceptive service. Information on practices that trained undergraduate medical students and general practice registrars was available

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Jarman UPA⁸ deprivation scores for each practice had already been calculated using census data.¹³ The effect of distance from the service was measured crudely by the district of the general practice, with the order of increasing distance being Wandsworth, Merton, then Sutton. Some remaining missing data were obtained by direct telephone contact with the practice.

Analysis of referrals was based on the assumption of a Poisson distribution. The associations between referral rates and various explanatory factors were investigated using univariate and multivariate Poisson regression analysis. Multivariate analysis was conducted using a forward selection procedure and variables were included if significant at the 5% level. The software package SPSS for Windows¹⁴ was used for descriptive data analysis and Stata¹⁵ was used for Poisson regression.

Results

General practices

One hundred and thirty-seven practices were included in the study, of which 124 were present throughout the full study period. These practices made 581 referrals to the Eating Disorder Service. The number of referrals per practice during this time ranged from zero (38 practices [28%]) to 34 (mean = 4.2, median = 3.0). The mean annual practice referral rate per 1000 patients aged under 65 years was 0.134 (median = 0.116, range = 0 to 0.55).

Forty-seven practices (34%) were single-handed, 37 (27%) had two partners, and the largest practice had nine partners. The majority of general practices (83 [61%]) had at some point during the study period included a female GP. Seventeen practices (12%) trained general practice registrars and 33 (24%) taught undergraduate students. Thirty-nine practices (28%) were fundholding.

Associations between referral rates and general practice factors are shown in Tables 1 and 2. On univariate analysis, all factors investigated were significantly associated with referral rates, with the exception of fundholding status. Higher referral rates

were associated with increasing numbers of partners, a female doctor in the practice, the training of both undergraduate students and vocational registrars, the presence of doctors having either MRCGP or other postgraduate qualifications, being located in the district closest to the service, and increased deprivation levels.

Many of these factors are interrelated. Owing to the strong correlation between the district of the practice and deprivation score, only the former was selected for entry to the multivariate model. The other factors that remained significant on multivariate analysis were the number of partners and the presence of a partner with the MRCGP qualification. Practice fundholding status became significant when considered simultaneously with other variables, with fundholders having lower referral rates. These factors together accounted for 19% of the variation in referral rates.

Individual general practitioners

The study included 434 GPs. Referrals per practitioner ranged from zero (192 [44%]) to 13 (mean = 1.3, median = 1.0). Individual referral rates per 1000 patients aged under 65 years ranged from zero to 4.14 (mean = 0.196, median = 0.085). Therefore, a GP with a list size of around 2000 patients aged under 65 years (around 2300 patients in total) on average referred two patients over a five-year period.

Two hundred and fifty-nine (60%) of the GPs were male. The mean age was 49 years. One hundred and twenty-two (28%) were recorded as having the MRCGP qualification, while 356 (82%) had other postgraduate qualifications, ranging from diplomas to other membership exams. The majority had qualified in the UK (315 [73%]). The next most common place of qualification was India (69 [16%]), with other medical schools represented in the Middle East, Africa, and Australia; these were all classified as 'non-UK' for the purposes of analysis. Thirty-seven (8%) GPs were vocational trainers and 275 (63%) offered full as opposed to restricted or no contraceptive services. Data on the provision of contraceptive services and vocational training were missing for 65 and 68 GPs respectively. Other variables had

Table 1. Univariate analysis of practice characteristics in relation to referral rate.

	Relative risk of referral	95% confidence interval	P-value	Variation explained (%)
Borough: Sutton vs Wandsworth	0.34	0.26–0.45	<0.001	10.4
Borough: Merton vs Wandsworth	0.79	0.66–0.95	0.013	-
Number of partners	1.17	1.13–1.21	<0.001	10.1
Female partner in practice	1.86	1.47–2.35	<0.001	4.5
Partner has MRCGP qualification	1.59	1.35–1.89	<0.001	4.4
Partner has other qualifications	1.29	1.05–1.58	0.014	0.9
Jarman UPA8 score	1.02	1.02–1.03	<0.001	3.9
Practice takes GP trainees	1.58	1.33–1.88	<0.001	3.5
Practice takes medical students	1.35	1.15–1.59	<0.001	1.8
Single-handed practice	0.62	0.47–0.82	0.001	1.8
Fundholding practice	0.98	0.83–1.16	0.853	<0.1

Table 2. Significant practice characteristics in relation to referral rate on multivariate analysis.^a

	Relative risk of referral	95% confidence interval	P-value
Borough: Sutton vs Wandsworth	0.41	0.31–0.54	<0.001
Borough: Merton vs Wandsworth	0.79	0.65–0.95	0.013
Number of partners	1.11	1.07–1.16	<0.001
Partner has MRCGP qualification	1.33	1.10–1.62	0.004
Fundholding practice	0.81	0.67–0.98	0.027

^aTotal variation explained by model = 18.6%.

missing values in between two and 10 cases.

Associations between referral rates and individual practitioner factors are shown in Tables 3 and 4. On univariate analysis, a significant positive relationship to referral was found for female sex, younger age, qualification in the UK, having the MRCGP qualification, being a GP trainer, provision of full contraceptive services, and working in a practice located in the closest district to the service. Having other qualifications was associated with a significantly lower referral rate.

Owing to the strong association between age and MRCGP, only the latter was selected for entry to the multivariate model. The other factors that remained significant on multivariate analysis were female sex, being UK-qualified, offering full contraceptive services, and the district of the practice. This model accounted for 10% of the variation in referral rates.

Discussion

Referral rates to the Eating Disorder Service varied enormously between general practices and between GPs. Our results suggest that the characteristics of GPs and practices play a significant role in explaining this variation. It seems unlikely that the variation can be solely accounted for by differing morbidity levels.

Studies of referral patterns of medical conditions have not consistently found any practice or practitioner factors to be associated with variation in referral rate.¹⁶ Studies of referrals of general psychiatric conditions to mental health specialists have shown a wide variation in rates and significant associations with GP characteristics.¹⁷ However, the main characteristics found to positively influence these referrals were older age, single-handed practice (both of which conflict with this study's findings), and practising in urban areas.^{17,18} The ability to detect mental disorders appears to be related to GP personality type and, unsurprisingly, detection of severe disorder is higher.¹⁷⁻¹⁹

Strengths and limitations

The routinely collected data used in this study may have been incomplete; however, data from the Medical Directory, Medical Register, and district health authority were cross checked as far

as possible. Because some characteristics have been averaged over six years, the relationship between variables may have been blunted. Some assumptions have been made, e.g. MRCGP qualification was used as a proxy for better knowledge. In addition, there is no information on the appropriateness of each referral, the morbidity in each practice, or patients' willingness or refusal to be referred. These factors require further exploration. We therefore cannot say with certainty that patients in specific practices are disadvantaged.

The great advantage of this study is that because of the local contractual arrangements during the study period, the majority of patients with eating disorders in this circumscribed area would have been referred to this service. This provides an ideal situation in which to study pathways into care for these patients. Since these practices serve a mixture of inner-city and suburban areas, which are varied in terms of deprivation and affluence, the results should be relevant to other parts of the country.

Possible explanations

Referral rates were strongly associated with the number of partners in the practice. This may reflect the potentially greater number of sympathetic professionals available. However, the practice size is highly correlated with a large number of other factors, including the presence of GPs who are female or have the MRCGP qualification, provision of a range of female-oriented services, the training of medical students and registrars, and having GPs with a range of ages. It is therefore difficult to disentangle the main reason for this effect.

The association found between having the MRCGP qualification and referral suggests that increased knowledge influences detection and referral. This association has been noted with respect to knowledge of otorhinolaryngology and ophthalmology.²⁰ The MRCGP qualification is not specific to psychiatry or, indeed, to eating disorders and may merely reflect increased knowledge of, or interest in, current trends. It would appear that higher training, rather than reducing referral rate through increased self-reliance, increases detection and confidence in referral, perhaps because GPs are more aware of the potential benefits of treatment.

Table 3. Univariate analysis of individual practitioner characteristics in relation to referral rate.

	Relative risk of referral	95% confidence interval	P-value	Variation explained (%)
Borough: Sutton vs Wandsworth	0.33	0.25–0.44	<0.001	5.2
Borough: Merton vs Wandsworth	0.84	0.70–1.01	0.061	-
Has MRCGP qualification	1.64	1.38–1.94	<0.001	2.1
Has other qualification	0.77	0.62–0.96	0.021	0.4
Female practitioner	1.54	1.31–1.82	<0.001	1.8
UK-qualified	1.66	1.36–2.04	<0.001	1.8
Age (per year)	0.99	0.98–0.99	<0.001	1.0
Offers full contraceptive services	1.39	1.11–1.73	0.004	0.7
GP trainer	1.41	1.12–1.76	0.003	0.6

Table 4. Significant practitioner characteristics in relation to referral rate on multivariate analysis.^a

	Relative risk of referral	95% confidence interval	P-value
Borough: Sutton vs Wandsworth	0.37	0.27–0.49	<0.001
Borough: Merton vs Wandsworth	0.81	0.67–0.98	0.031
Female practitioner	1.43	1.21–1.71	<0.001
Has MRCGP qualification	1.44	1.20–1.74	<0.001
UK-qualified	1.44	1.16–1.80	0.001
Offers full contraceptive service	1.31	1.05–1.64	0.018

^aTotal variation explained by model = 10.4%.

The presence of a female GP and provision of full contraceptive services were both significantly related to referral rates, effects that to our knowledge have not previously been demonstrated. Offering a range of female-oriented services may provide more opportunity to detect problems relating to women. Female doctors may have greater empathy with women and may be more aware of, and sympathetic to, patients with eating disorders. The presence of a female GP, and the provision of services for women, may also simply attract patients with eating disorders to register with that practice, therefore increasing the eating disorder morbidity within the practice.

General practitioners who qualified outside the UK were less likely to refer. It is well known that eating disorders are culture bound and, therefore, such GPs may have less awareness of this peculiarly Western condition. There may also be an effect owing to differences in the ethnic mix of their patient populations. A study of women from the same catchment area found no difference between Caucasian, Asian, and Afro-Caribbean women in their concern with body weight and shape.²¹ However, the Caucasian group differed from the others in that disordered eating attitudes were significantly positively correlated with feelings of anxiety and depression. More information on the ethnicity of practice populations is required to explore this further.

The lower referral rate with increasing distance from the clinic is, at first sight, unsurprising. However, all three boroughs are within a ten-mile radius and, therefore, the distances involved are not great. The reason may be partly historical, since the nearest area, Wandsworth, has had a contractual arrangement with St George's Eating Disorder Service for a longer period of time. Consequently, Wandsworth practices may have more awareness of the service. (This area also contains a substantial nursing and medical student population of young women.) Deprivation levels are highest in Wandsworth. The apparent raised referral rates linked with increased deprivation is contrary to expectation and seems more likely to be the result of the strong correlation between deprivation and area.

Fundholding practices had significantly lower referral rates. This may reflect a shift in priorities in the allocation of resources as fundholding may have enabled practices to provide psychological treatments on site, which would reduce the need for referral.

Conclusion

Evidence suggests that early intervention for an eating disorder improves the prognosis,²² so early detection and referral in primary care is important. However, the Royal College of Psychiatrists have highlighted the inadequate number of specialist treatment services and recommended that those with recent onset binge-eating and bulimia nervosa should be treated in general practice before referral is considered.²³

Educational intervention should perhaps be targeted towards low referrers. Our results suggest that patients with eating disorders may be at a disadvantage in practices that are small, do not offer a range of services for women, have no female GP, or no GPs with further qualifications; although it should be noted that practice and practitioner factors accounted for only 19% and 10% respectively of the variation in referral rates. Further research into the knowledge and attitudes of referring GPs is currently in progress.

References

1. Kendler KS, MacLean C, Neale M, *et al.* The genetic epidemiology of bulimia nervosa. *Am J Psychiatry* 1991; **148**: 1627-1637.
2. Hsu LK. Epidemiology of the eating disorders. *Psychiatr Clin North Am* 1996; **19**: 681-700.
3. Rooney B, McClelland L, Crisp AH, Sedgwick PM. The incidence and prevalence of anorexia nervosa in three suburban health districts in south west London, UK. *Int J Eat Disord* 1995; **18**: 299-307.

4. Crisp AH, Palmer RL, Kalucy RS. How common is anorexia nervosa? A prevalence study. *Br J Psychiatry* 1976; **128**: 549-554.
5. Fairburn CG, Beglin SJ. Studies of the epidemiology of bulimia nervosa. *Am J Psychiatry* 1990; **147**: 401-408.
6. Shisslak CM, Crago M, Estes LS. The spectrum of eating disturbances. *Int J Eat Disord* 1995; **18**: 209-219.
7. King MB. Eating disorders in general practice. *J R Soc Med* 1990; **83**: 229-232.
8. Cooper B, Coker S, Fleming C. Self-help for bulimia nervosa: a preliminary report. *Int J Eat Disord* 1994; **16**: 401-404.
9. Treasure J, Schmidt U, Troop N, *et al.* Sequential treatment for bulimia nervosa incorporating a self-care manual. *Br J Psychiatry* 1996; **168**: 94-98.
10. Waller D, Fairburn C, McPherson A, *et al.* Treating bulimia nervosa in primary care: a pilot study. *Int J Eat Disord* 1996; **19**: 99-103.
11. *The Medical Directory*. London: The Modern Book Company, 1997.
12. General Medical Council. *The Medical Register*. Cambridge: Cambridge University Press, 1996.
13. Majeed FA, Cook DG, Poloniecki J, *et al.* Sociodemographic variables for general practitioners: use of census data. *BMJ* 1995; **310**: 1373-1374.
14. SPSS Inc. *SPSS for Windows, Base Systems Users Guide*. [Release 6.0.] Chicago: SPSS Inc, 1993.
15. Stata Corporation. *Stata Reference Manual, 6th ed.* [Release 3.1.] College Station, Tx: Stata Corporation, 1993.
16. Wilkin D. Patterns of referral: explaining variation. In: Roland M, Coulter A (eds). *Hospital referrals*. Oxford: Oxford University Press, 1992.
17. Wilkinson G. Referrals from general practitioners to psychiatrists and paramedical mental health professionals. *Br J Psychiatry* 1989; **154**: 72-76.
18. Robertson NC. Variations in referral pattern to the psychiatric services by general practitioners. *Psychol Med* 1979; **9**: 355-364.
19. Marks JN, Goldberg DP, Hillier VF. Determinants of the ability of general practitioners to detect psychiatric illness. *Psychol Med* 1979; **9**: 337-353.
20. Reynolds GA, Chitnis JG, Roland MO. General practitioner outpatient referrals: do good doctors refer more patients to hospital? *BMJ* 1991; **302**: 1250-1252.
21. Dolan B, Lacey JH, Evans C. Eating behaviour and attitudes to weight and shape in British women from three ethnic groups. *Br J Psychiatry* 1990; **157**: 523-528.
22. Hall A, Slim E, Hawker F, Salmond C. Anorexia nervosa: long-term outcome in 50 female patients. *Br J Psychiatry* 1984; **145**: 407-413.
23. Royal College of Psychiatrists. *Eating Disorders. Council Report CRI4*. London: Royal College of Psychiatrists, 1992.

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