Sex and attitude: a randomized vignette study of the management of depression by general practitioners

SUE ROSS

KATRINA MOFFAT

ALEX McCONNACHIE

JACKI GORDON

PHILIP WILSON

SUMMARY

Background. *The management and detection of depression varies widely, and the causes of variation are incompletely understood.*

Aims. *To describe and explain general practitioners' (GPs') current practice in the recognition and management of depression in young adults, their attitudes towards depression, and to investigate associations of GP characteristics and patient sex with management.*

Method. *All GP principals in the Greater Glasgow Health Board were randomized to receive questionnaires with vignettes describing increasingly severe symptoms of depression in either male or female patients, and asked to indicate which clinical options they would be likely to take. The Depression Attitude Questionnaire was used to elicit GP attitudes.*

Results. *As the severity of vignette symptoms increased, GPs responded by changing their prescribing and referral patterns. For the most severe vignette, the majority of GPs would prescribe drugs (76.4%) and refer the patient for further help (73.7%). Male and female patients were treated differently: GPs were less likely to ask female patients than male patients to attend a follow-up consultation (odds ratio [OR] = 0.55), and female GPs were less likely to refer female patients (OR = 0.33). GPs with a pessimistic view of depression, measured using the 'inevitable course of depression' attitude scale, were less willing to be actively involved in its treatment, being less likely to discuss a non-physical cause of symptoms (OR = 0.77) or to explore social factors in moderately severe cases (OR = 0.68).*

Conclusions. *Accepting the limitations of the method, GPs appear to respond appropriately to increasingly severe symptoms of depression, although variation in management exists. Educational programmes should be developed with the aim of enhancing GP attitudes towards depression, and the effects on detection and management of depression should be rigorously evaluated.*

S Ross, BSc, MPhil, PhD, lecturer in health care research; K Moffat, MRCGP, clinical research fellow; A McConnachie, MSc, statistical research fellow; and P Wilson, DPhil, MRCP, MRCGP, senior clinical research fellow, Department of General Practice, University of Glasgow, Woodside Health Centre, Glasgow. J Gordon, MSc, MPH, senior health promotion officer, Health Promotion Department, Greater Glasgow Health Board, Glasgow.

Submitted: 22 December 1997; final acceptance: 31 July 1998.

Key words: general practice; management of depression; vignette methodology; sex; attitude.

Introduction

DEPRESSION is a common and distressing illness managed almost completely in general practice.[1,2] Early detection has been shown to lead to better treatment and prognosis.[3,4] Nevertheless, researchers have repeatedly identified variation and possible deficiencies in the identification and management of depressive illness in general practice.[5-7] Such differences may be due to variation in patient characteristics, including symptom severity and presentation, sex, and age;[7-9] or variation in doctor characteristics, including age, sex, experience, training, and attitudes.[7-12] However, the causes of variation are incompletely understood. Further understanding is vital if a real improvement is to be made in clinical practice.

To investigate variations in detection and management of depression in a large health board area, Glasgow, we required a method that would be widely applicable. We chose a vignette method to standardize patient characteristics. The age of patients was restricted to 22 years because younger patients, and in particular young male patients, are at particular risk of non-detection[7,9] and suicide.[13] Two patient dimensions were varied: symptom severity and the sex of the patient. Sex was a characteristic of particular interest, as several research studies have demonstrated that women have higher rates of diagnosis for depression than men.[7,9] To investigate patient sex-dependent differences in management, general practitioners (GPs) were randomized to receive a series of vignettes featuring either a male or female patient. This method permitted closer examination of the impact of GP characteristics, including attitudes toward depression, measured using the Depression Attitude Questionnaire (DAQ),[11] on reported detection and management.

The aims of this study were therefore to describe and explain GP attitudes to depression, current practice in the recognition and management of depression in young people, and to investigate associations of GP characteristics and patient sex with management, taking into account the severity of presenting symptoms.

Method

All GP principals practising in the Greater Glasgow Health Board area (n = 614) were randomized to receive one of two versions of a questionnaire containing vignettes describing a patient presenting with depression. In one version the vignette patient was male and in the other the patient was female. The questionnaires were otherwise identical.

The vignettes were designed using the method of West,[14] and described a patient presenting during a typical consultation with increasingly severe symptoms of depression:

- Imagine you are in a typical surgery. A 22-year-old female/male presents saying she/he is worried about her/his acne. Her/his skin condition appears mild.
- Next, imagine the same situation, but in addition to concerns about acne, the patient reveals that she/he feels tired all the

time.
- Now imagine that the patient starts to cry and reveals that she/he has had suicidal thoughts.

The questionnaire also included an adaptation of DAQ.[11] General practitioners were asked to respond to each of 20 statements on a five-point scale from 'strongly agree' to 'strongly disagree'. Analysis of the DAQ responses was repeated using the method of Botega *et al*,[11] identifying three major components. Before calculating average scores, the Likert responses were converted to values equivalent to those used by Botega: 10 (most positive response), 30, 50, 70, and 90 (most negative). Scores for each component were calculated for each GP as the average of relevant items:

- 'Inevitable course of depression': high scores indicate a belief that depression is not a condition that is amenable to treatment (items 10, 11, 14, 16, 17).
- 'Professional confidence': high scores indicate confidence both in dealing with depressed patients and in applying medical intervention (items 9, 13, 15, 18, 20).
- 'Social model of depression': high scores indicate a belief that depression arises from life events and that a medical intervention may not be required (items 2, 3, 8, 12).

Data were entered using SPSS for Windows and analysed using SPSS, S-PLUS for Windows (version 4.0), and SAS for Windows (version 6.12). Comparisons of proportions were carried out using chi-squared tests, and non-parametric continuous variables were studied using Mann–Whitney tests.

Vignette responses were studied by logistic regression using the Generalized Estimating Equations (GEE) approach[15] to allow for correlation in response to each question between different vignettes. For each response, an initial model was fitted allowing for effects due to vignette severity, patient sex, and GP characteristics of sex, age, attitudes to depression, and previous psychiatric working experience, as well as patient sex/GP sex interaction. A backward stepwise procedure was employed to determine important predictors, which were then tested for any interactions with vignette severity.

Results

Responder characteristics

Replies were received from 422 GPs: 15 questionnaires were incomplete, but the remaining 407 replies were usable, yielding a response rate of 66.3% (Table 1). Responders represented 79.6% of general practices, with single-handed practices under-represented. Of those who replied, 201 (49.6%) answered female vignettes and 206 (50.4%) answered male vignettes: GP characteristics were similar for both groups.

From results to individual DAQ items (Table 2), responses to the attitude scales were calculated as follows: 'inevitable course of depression' (median = 30, interquartile range [IQR] = 26–34); 'professional confidence' (median = 54, IQR = 50–62); 'social model of depression' (median = 50, IQR = 45–60).

Vignettes

As the severity of vignette symptoms increased, so reported management changed (Table 3). The first vignette was interpreted mainly as a dermatological consultation, with the majority of GPs reporting that they would probably consider prescribing acne treatments (72.1%), for example, topical acetoxyl or oral tetracycline. The second vignette prompted the majority of GPs to explore social factors (95.3%), ask about symptoms of psychological disturbance (93.1%), perform a physical examination (78.6%), and discuss the possibility of a non-physical cause (84.3%). A minority of GPs reported that they would probably consider prescribing drugs (28.0%), with acne treatments continuing to be most often prescribed. For the third vignette, where the patient revealed suicidal thoughts, GPs reported being likely to explore social factors (99.3%), to ask about symptoms of psychological disturbance (99.5%), to discuss the possibility of a non-physical cause (92.9%), and to arrange a further consultation (97.1%). The majority reported that they would probably prescribe drugs (76.4%), usually specifying an antidepressant, generally a serotonin-specific re-uptake inhibitor. In addition, the majority would consider referring (73.7%), generally to a psychiatrist or psychiatric team.

Logistic regression models

Results of the final logistic regression models for each vignette response, including any interactions with vignette severity, are presented in Table 4. Vignette severity had strong effects on each response and these effects are omitted. All other effects in each final model are given as an odds ratio (OR), with 95% confidence intervals.

GPs were less likely to arrange a further consultation for female patients than for male patients (OR = 0.55). Female GPs were more likely to report that they would instigate investiga-

Table 1. Characteristics of responders and non-responders: GPs and practices.

	GP responders n = 407 (66.3%)	GP non-responders n = 207 (33.7%)[a]	Statistical test
Sex (male)	228/407 (56.0%)	127/190 (66.8%)	P = 0.01
Years registered	median = 17 IQR = 11–23	median = 19 IQR = 14–27	P = 0.001
MRCGP	216/407 (53.1%)	70/207 (33.8%)	P<0.0001
DRCOG	186/407 (45.7%)	70/207 (33.8%)	P = 0.005
Previous psychiatric experience	190/407 (46.7%)	Not available	
	Practices with responders n = 172 (79.6%)	Non-responding practices n = 42 (19.4%)[b]	
Practice average Jarman scores	median = 15.9 IQR = 6.5–23.1	median = 20.75 IQR = 12.2–25.6	P = 0.06
Number of partners	median = 3 IQR = 2–4	median = 1 IQR = 1–2	P<0.0001

[a]Includes 15 returned uncompleted; [b]of 65 GP single-handed practices, 30 (46.2%) did not reply.

Table 2. Responses to the Depression Attitude Questionnaire: number (%) of GPs who agreed or disagreed with the statements (*n* £ 407).

Statement	Agree	Neutral	Disagree
'Inevitable course of depression' scale			
10 Depression reflects a characteristic response in patients that is not amenable to change	17 (4.2)	50 (12.4)	335 (83.3)
11 Becoming depressed is a natural part of being old	4 (1.0)	14 (3.4)	388 (95.6)
14 There is little to be offered to those depressed patients who do not respond to what GPs do	22 (5.4)	35 (8.6)	348 (85.9)
16 Psychotherapy tend to be unsuccessful with depressed patients	73 (18.1)	149 (37.0)	181 (44.9)
17 If depressed patients need antidepressants, they are better off with a psychiatrist than a GP	11 (2.7)	17 (4.2)	377 (93.1)
'Professional confidence' scale			
9 I feel comfortable in dealing with depressed patients' needs	265 (65.4)	91 (22.5)	49 (12.1)
13 Working with depressed patients is heavy going	299 (73.8)	53 (13.1)	53 (13.1)
15 It is rewarding to spend time looking after depressed patients	237 (58.5)	121 (29.9)	47 (11.6)
18 Antidepressants usually produce a satisfactory result in the treatment of depressed patients in general practice	289 (71.5)	81 (20.0)	34 (8.4)
20 If psychotherapy were freely available, it would be more beneficial than antidepressants for most depressed patients	100 (24.6)	158 (38.9)	148 (36.5)
'Social model of depression' scale			
2 The majority of depression seen in general practice originates from patients' recent misfortunes	184 (45.3)	99 (24.4)	184 (45.3)
3 Most depressive disorders seen in general practice improve without medication	134 (33.3)	113 (28.0)	156 (38.7)
8 Depressed patients are more likely to have experienced deprivation in early life than other people	136 (33.7)	126 (31.2)	142 (35.1)
12 The practice nurse could be a useful person to support depressed patients	210 (51.9)	95 (23.5)	100 (24.7)
Other items			
1 During the past five years, I have seen an increase in the number of patients presenting with depressive symptoms	272 (67.2)	99 (24.4)	34 (8.4)
4 An underlying biochemical abnormality is at the basis of severe cases of depression	270 (66.7)	87 (21.5)	48 (11.9)
5 It is difficult to differentiate whether patients are presenting with unhappiness or with clinical depressive disorder that needs treatment	197 (48.6)	67 (16.5)	141 (34.8)
6 It is possible to distinguish two main groups of depression: one psychological in origin and the other caused by biochemical mechanisms	72 (17.7)	105 (25.9)	229 (56.4)
7 Becoming depressed is a way that people with poor stamina deal with life difficulties	49 (12.1)	70 (17.3)	286 (70.6)
19 Psychotherapy for depressed patients should be left to a specialist	262 (64.7)	77 (19.0)	66 (16.3)

Table 3. Responses for the three vignettes: number (percentage) of GPs who reported they would probably take the specified action (n = 407).

	Vignette 1: Mild depression	Vignette 2: Moderate depression	Vignette 3: Suicidal tendencies
Explore social factors	162 (39.8)	388 (95.3)	404 (99.3)
Ask about symptoms of psychological disturbance	161 (39.6)	379 (93.1)	405 (99.5)
Perform a physical examination	122 (30.0)	320 (78.6)	123 (30.2)
Instigate investigations	3 (0.7)	318 (78.1)	123 (30.2)
Consider prescribing drugs	324 (79.6)	114 (28.0)	311 (76.4)
Acne preparations specified[a]	294 (72.1)	85 (20.8)	22 (5.4)
Antidepressants specified[a]	1 (0.2)	7 (1.7)	242 (59.3)
Discuss possibility of non-physical cause	126 (31.0)	343 (84.3)	378 (92.9)
Consider referring	10 (2.5)	13 (3.2)	300 (73.7)
Arrange further consultation	294 (72.2)	369 (90.7)	395 (97.1)

[a]Not all GPs specified which type of drug they would prescribe.

tions than male GPs (OR = 1.55). An interaction was found between the effects of GP sex and patient sex on referral: while male GPs did not show a difference between female and male patients (OR = 0.93), female GPs would be less likely to refer a female patient (OR = 0.33).

GPs with higher 'inevitable course of depression' scores were less likely to discuss a non-physical cause of symptoms (OR = 0.77) or social factors and life events when faced with mild or moderate depression (ORs = 0.84, 0.68, 1.14). Those with higher 'professional confidence' scores would be less likely to prescribe acne drugs (OR = 0.79) and less likely to instigate investigations, particularly for the less severe vignettes (ORs = 0.38, 0.68, 0.88). Those with higher 'social model of depression' scores were more likely to prescribe acne drugs (OR = 1.29) and less likely to prescribe psychiatric drugs when faced with either mild or severe depression (ORs = 0.45, 1.81, 0.69), though the effect seen under

Table 4. Estimates of logistic regression parameters, presented as odds ratios (95% confidence intervals) for those parameters in the final model for each response, taking into account vignette severity.

Vignette question	Sex of patient	Sex of GP	'Inevitable course of depression' score	'Professional confidence' score	'Social model of depression' score	Age of GP	Previous psychiatric job
Social factors and life events			0.84 (0.69–1.03)				
			0.68 (0.52–0.89)				
			1.14 (0.88–1.47)				
Psychological symptoms							
Physical examination							0.60 (0.45–0.81)
Investigations		1.55 (1.03–2.33)		0.38 (0.22–0.65)		7.20 (2.74–18.88)	
				0.68 (0.49–0.95)		1.69 (1.15–2.48)	
				0.88 (0.65–1.19)		1.25 (0.94–1.65)	
Psychiatric drugs					0.45 (0.36–0.54)		
					1.81 (0.84–3.90)		
					0.69 (0.52–0.91)		
Acne drugs					1.29 (1.01–1.65)		
Non-physical cause				0.79 (0.62–0.99)			
Refer			0.77 (0.66–0.91)				
	0.93 (0.54–1.60)	Male					
	0.33 (0.13–0.87)	Female					
Further consultation	0.55 (0.36– 0.85)						

Notes. Sex of patient and GP: odds ratios are for females relative to males. DAQ scores: odds ratios are for a responder with a score at the upper quartile of the sample distribution relative to one at the lower quartile. Age: odds ratios are for a responder relative to one 10 years younger. Previous psychiatric job: odds ratios are for a responder who has had a previous psychiatric job relative to one who has not.
Interactions. For referrals, an interaction was found between the sex of the patient and the sex of the GP. In other words, there were found to be different effects due to the sex of the patient dependent on the sex of the GP. Patient sex effects are reported for both male and female GPs.Where three effect estimates and confidence intervals are given, this indicates an interaction between the effect and the severity of the vignette. Effects are then reported for each vignette, with the least severe vignette first.

mild depression is suspect since it is based on a single GP with a low score who stated that he/she would prescribe. Older GPs were more likely to instigate further investigations, particularly in the less severe cases (ORs = 7.20, 1.69, 1.25). GPs with previous psychiatric experience would be less likely to conduct a physical examination (OR = 0.60).

Discussion

This study applied a vignette method to investigate recognition and management of depression among all GPs in a large urban health board area, offering insights into the causes of variation. Accepting the limitations of the method, the results demonstrated that the majority of GPs responded appropriately to increasingly severe symptoms of depression by changing their referral and prescribing patterns, although diversity in practice was noted. Male and female patients were treated differently, with GPs more likely to ask male patients to attend a follow-up consultation and female GPs more likely to refer male patients for psychiatric help.

The message of the Defeat Depression Campaign is clear: depression is common, recognizable, and treatable, with the implication that GPs do not always identify and treat patients appropriately.[1,16] General practice guidelines stress the need to recognize depression at an early stage,[16,17] and early treatment may prevent it becoming chronic.[3,4] However, a recent *British Medical Journal* editorial recommended 'watchful waiting' as the best action for minor depression, with further intervention as symptoms increase.[18] Responses to the vignettes suggest that this is the course of action favoured by GPs.

General practitioners in our study were randomized to receive identical vignettes differing only in patient sex. The finding that male patients were likely to receive more follow-up attention than females appears to contradict clinical research that reports that women are much more likely than men to be diagnosed as having depressive disorders and to receive antidepressant prescriptions.[19,20] The sex bias in diagnosis and treatment of depression has been ascribed to women seeking medical care more often than men, verbalizing their symptoms more effectively, and requesting more medication. Another possible explanation is the 'negative stereotype': the perception that young, male, educated bachelors would not be expected to suffer from depression.[7,9] The reason for an increased level of follow-up in our male vignettes may be a belief that female patients who present are likely to re-attend on their own initiative, or awareness that young male patients are at a high and increasing risk of suicide.[13] The finding that GPs take such patients seriously in a vignette study is encouraging; however, the factors contributing to lower diagnosis rates in men[7,19] remain to be established.

In our study, only minor differences were noted between the reported actions of male and female GPs. Our findings are supported by other studies that found that the management of depression did not differ between male and female GPs, but that there was selective recruitment of symptomatic patients to women GPs, probably because patient perceptions of GPs differed.[7,9]

The effects of GP age on the management and detection of depression have been discussed by several authors with little evidence of effect.[8,12] Our finding that older GPs were more likely to report instigating further investigations may be because older GPs had a more positive attitude towards 'physical' cases than 'psychosocial' cases.[12] Greater experience of psychiatry may also influence responses to physical and psychosocial cases:[12] our responders with previous psychiatric experience were less likely to instigate further investigations.

General practitioner attitudes towards depression have been linked to identification and management of depression.[7-12] To aid research in this area, DAQ, developed in the UK, was designed to measure practitioners' attitudes.[11] The three attitude scales we identified for use in our large group of GPs appeared to be linked to differences in management of depression. Responses of GPs with high 'inevitable course of depression' scores suggested that a pessimistic view of depression is associated with less willingness to be actively involved in its treatment. General practitioners with high 'professional confidence' in dealing with depressed patients were more inclined to heed psychiatric symptoms at an early stage. Those with higher 'social model of depression' scores were less likely to consider prescribing psychiatric drugs, believing that a medical intervention may not be required for depression. Similar observations were made in a previous study using DAQ: GPs who prescribed low doses of antidepressants tended to reflect a combination of lack of therapeutic optimism with reduced ease in dealing with depressed patients.[10]

Vignette studies have been criticized for presenting a series of hypothetical scenarios, without being related to actual clinical practice.[12] Although personal cues and background information, present in real life consultations, were missing from the vignettes, the scenarios presented in this study had acceptable face validity with increasing severity of depression leading to different management. In investigating the impact of patient sex on recognition and management of depression, it would have been very difficult to standardize simulated patients, and such a method would have proved extremely expensive. The vignette method therefore reduced bias by presenting patients who were identical in all but their sex, and allowed us to include all Glasgow GPs in our study.

Despite the trend of falling GP response rates to postal surveys,[21-24] our response rate of 66.3% was excellent taking account of the complexity of the questionnaire, and compares favourably with response rates in other questionnaire surveys of GPs.[25] Previous research has shown that non-responding GPs tend to be older,[24] more experienced, less well qualified, and often single-handed practitioners,[21] and this is reflected in our study introducing the potential for non-response bias. The fact that younger GPs are more likely to have had psychiatric experience, coupled with any self-selection bias, may have resulted in our study obtaining a more positive attitude towards depression than among the GP population as a whole. Further work; for example, a telephone survey of non-responders, would determine the extent and nature of any such bias. However, our responders were derived from a complete population of GPs providing care for a whole city, rather than a selected sample, which may make our results more robust and generalizable than studies including restricted numbers of GPs[6,7-10] or GPs from a research network.[11]

Although exploring and explaining variations in GP detection and management of depression is important, the ultimate goal is improvement in clinical practice. Various educational strategies have effectively been employed in enhancing the detection of depression in general practice, including group training courses,[26] self-directed educational interventions,[27,28] with postal questionnaires used to identify priorities in mental health training.[25] We intend to use the results of this study to inform on the content and targeting of educational programmes, and to evaluate how such an intervention effects the detection and management of depression in general practice.

References

1. Wright AF. Continuing to defeat depression. [Editorial.] *Br J Gen Pract* 1995; **45:** 170-171.
2. Blacker CVR, Clare AW. Depressive disorders in primary care. *Br J Psychiatr* 1987; **150:** 737-751.
3. Ormel J, Koeter MWJ, van den Brink W, van den Villige G. Recognition, management, and course of anxiety and depression in general practice. *Arch Gen Psychiatr* 1991; **48:** 700-706.
4. Lloyd KR, Jenkins R, Mann A. Long term outcome of patients with neurotic illness in general practice. *BMJ* 1996; **313:** 26-28.
5. Whitehouse C. Psychosocial illness management in general practice. *J R Coll Gen Pract* 1987; **37:** 112-115.
6. Goldberg DP, Blackwell B. Psychiatric illness in general practice. *BMJ* 1970; **2:** 439-443.
7. Marks JN, Goldberg DP, Hillier VF. Determinants of the ability of general practitioners to detect psychiatric illness. *Psychol Med* 1979; **9:** 337-353.
8. Howe A. "I know what to do, but it's not possible to do it" - general practitioners' perceptions of their ability to detect psychological distress. *Fam Pract* 1996; **13:** 127-132.
9. Boardman AP. The General Health Questionnaire and the detection of emotional disorder by general practitioners: a replicated study. *Br J Psychiat* 1987; **151:** 373-381.
10. Kerr M, Blizard R, Mann A. General practitioners and psychiatrists: comparison of attitudes to depression using the depression attitude questionnaire. *Br J Gen Pract* 1995; **45:** 89-92.
11. Botega N, Blizard R, Wilkinson G, Mann A. General practitioners and depression - first use of the depression attitude questionnaire. *Int J Methods Psychiatric Res* 1992; **2:** 169-180.
12. Dale J, Middleton H. Factors influencing general practitioners' management of psychosocial and physical problems: a study using case vignettes. *Br J Gen Pract* 1990; **40:** 284-288.
13. McLoone P. Suicide and deprivation in Scotland. *BMJ* 1996; **312:** 543-544.
14. West P. *Reproducing naturally occurring stories: vignettes in survey research.* Glasgow: MRC Medical Sociology Research Unit, 1982.
15. Zeger SL, Liang K-Y. Longitudinal data analysis for discrete and continuous outcomes. *J Biometrics* 1986; **42:** 121-130.
16. Priest RG. A new initiative on depression. [Editorial.] *Br J Gen Pract* 1991; **41:** 487.
17. Paykel ES, Priest RG. Recognition and management of depression in general practice: consensus statement. *BMJ* 1992; **305:** 1198-1202.
18. Kendrick T. Prescribing antidepressants in general practice. [Editorial.] *BMJ* 1996; **313:** 829-830.
19. Williams JBW, Spitzer RL, Linzer M, *et al*. Gender differences in depression in primary care. *Am J Obstet Gynaecol* 1995; **173:** 654-659.
20. Wright AF. Psychological distress in a general practice: outcomes and consultation rates. *J R Coll Gen Pract* 1988; **38:** 542-545.
21. Cartwright A. Professionals as responders: variations in and effects of response rates to questionnaires. *BMJ* 1978; **ii:** 1419-1421.
22. MacDonald P. Response rates in general practice studies. [Letter.] *Br J Gen Pract* 1993; **43:** 484.
23. McAvoy BR, Kaner EFS. General practice postal surveys: a questionnaire too far. *BMJ* 1996; **313:** 732-733.
24. Templeton L, Deehan A, Taylor C, *et al*. Surveying general practitioners: does a low response rate matter? *Br J Gen Pract* 1997; **47:** 91-94.
25. Kerwick S, Jones R, Mann A, Goldberg D. Mental health training priorities in general practice. *Br J Gen Pract* 1997; **47:** 225-227.
26. Gask L, McGrath G, Goldberg D, Millar T. Improving the psychiatric skills of established general practitioners: evaluation of group teaching. *Med Educ* 1987; **21:** 362-368.
27. Hannaford PC, Thompson C, Simpson M. Evaluation of an educational programme to improve the recognition of psychological illness by general practitioners. *Br J Gen Pract* 1996; **46:** 333-337.
28. Howe A. Detecting psychological distress: can general practitioners improve their own performance? *Br J Gen Pract* 1996; **46:** 407-410.

Acknowledgements

This study was initiated and funded by the Department of General Practice of the University of Glasgow and the Health Promotion Department of Greater Glasgow Health Board. We thank Professor Graham Watt, Department of General Practice, for his useful comments and encouragement in completing the project; Patrick West (MRC Medical Sociology Research Unit, Glasgow University), and Neil McKeganey (Centre for Drug Misuse, Glasgow University) for help in designing the vignettes; Michere Beaumont for assistance in questionnaire administration and data entry; and all the GPs who participated in the study.

Address for correspondence

Dr Sue Ross, Health Services Research Unit, University of Aberdeen, Foresterhill, Aberdeen AB25 2ZD.