Outcome of anxiety and depressive disorders in primary care

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Background Factors related to the outcome of depression and anxiety in primary care are not fully understood.

Method Adult patients in general practice with depressive, anxiety or panic disorder (n=148; DSM–III–R criteria) were studied prospectively for six months to determine the factors most closely associated with outcome. The Psychiatric Assessment Schedule, Hamilton Depression Rating Scale, Clinical Anxiety Scale and Life Events and Difficulties Schedule interviews were performed at index consultations and repeated six months later. Variables associated with outcome were assessed by multiple regression analysis.

Results Good outcome was predicted by mild depression at initial assessment, high educational level, and being in employment. At follow-up the most important predictor of improvement was reduction in marked difficulties over the six months. Recognition and management by the GP was most frequent in patients with severe disorder; such patients were least likely to improve because of the severity of their depression and marked social difficulties.

Conclusions This naturalistic study helps to provide a framework for further studies with more precisely defined groups of people with depression. An effective treatment strategy for people with marked depression and ongoing social difficulties is especially needed.

The outcome of anxiety and depression in primary care is not well understood. Recovery rates have varied between 25 and 70% reflecting different study designs, inclusion criteria and outcome measures (Blacker & Clare, 1987; Katon & Schulberg, 1992). Precise guidelines for treatment are impossible with the current state of knowledge; some suggest little intervention is necessary from the general practitioner (GP) (e.g. watchful waiting – Coyne et al, 1995) while others emphasise the importance of the detection and active treatment by the GP (Blacker & Clare, 1987; Ormel et al, 1993; Simon et al, 1995; Ormel & Tiermens, 1995; Katon, 1995). Further research is needed before deciding which patients require intervention and which will resolve spontaneously (Von Korff et al, 1987; Barrett et al, 1988; Coyne et al, 1995) and randomised controlled treatment studies need to be complemented with findings from naturalistic studies in order to complete the clinical picture of outcome of depression (Coryell et al, 1994; Piccinelli & Wilkinson, 1994; Romana et al, 1995).

The variables which may determine outcome are numerous. Chronic and severe disorders in primary care have a poor outcome (Kedward, 1969; Mann et al, 1981; Kessler et al, 1985; Parker et al, 1986; Ormel et al, 1990). Severity was the single most important predictor of outcome in naturalistic and treatment studies (Mann et al, 1981; Paykel et al, 1988). Duration of follow-up period of naturalistic studies have varied from 20 weeks (Parker et al, 1986) to 3.5 years (Kedward, 1969; Ormel et al, 1993) so the results may not be comparable with treatment trials using follow-up of six weeks to six months (Paykel et al, 1988; Scott & Freeman, 1992).

Defining 'recovering' as no longer being a 'case' at follow-up can produce a 50–80% recovery rate, whereas a multi-categorical measure, encompassing degrees of reduced psychopathology and residual disability, produced a recovery rate of less than 50%

at 3.5 years (Ormell et al, 1993); or 24% complete improvement (with 51% variable course) (Mann et al, 1981).

The present study was designed to measure the outcome of anxiety and depressive disorders in primary care and assess the principal predictors of outcome. We included a variety of acute and chronic cases as they appear in the GP's surgery. We screened all GP attenders because relying on GP recognition misses many patients with psychiatric disorder and biases the sample towards chronic disorders with a poor outcome (Kessler et al, 1985). Patients were followed-up over six months because we feared too many drop-outs during a one-year study in an inner-city population with high mobility. Outcome was assessed in several ways.

Patients with anxiety and depressive disorders (DSM–III–R criteria; American Psychiatric Association, 1987) were included to observe whether diagnostic group was associated with outcome as the previous literature disagrees on this point (Mann et al, 1981; Ormel et al, 1990).

It was predicted that life events and chronic difficulties would be more important than GP management in determining outcome when diagnosis, severity and chronicity were controlled.

METHOD

The study was based at a large inner-city practice, with 13 000 patients, nine GP principals and four GP trainees. The practice had an attached psychiatric social worker, and visiting psychiatrist (using the liaison model) and a clinical psychologist at the health centre (Creed & Marks, 1989).

Selection of subjects

Study subjects were identified by a two-stage procedure. All surgery attenders, aged 16 or over, completed the General Health Questionnaire 28-item version (GHQ–28; Goldberg, 1978), while waiting to see their GP; those who scored ≥6, or who indicated current treatment for 'nerves' underwent a psychiatric interview within a few days. Patients were only included in the study if they had sufficient symptoms for a diagnosis of generalised anxiety, panic or depressive disorder according to DSM–III–R criteria. The patients continued their usual treatment from the GP, who was not informed of the psychiatric assessment results. This method of selection included recent onset and chronic cases.

Psychiatric and social assessments

In order to establish diagnosis, the patients' symptoms were assessed by a trained doctor (K.S., C.R.) using the Psychiatric Assessment Schedule (PAS; Dean *et al*, 1983). Severity of disorder was established using the Hamilton Depression Rating Scale (HDRS; Hamilton, 1967), and the Clinical Anxiety Scale (CAS; Snaith *et al*, 1982). At a separate interview social problems were assessed by the social research worker (S.W.) using the Life Events and Difficulties Schedule (LEDS; Brown & Harris, 1978). Life events and difficulties were established for one year prior to the index consultation (irrespective of onset of disorder).

All these measures were repeated at two follow-up interviews after six months. Psychiatric symptoms were established for one month before the follow-up interview (PAS, HDRS, CAS) and the course of the disorder was established during the six months. Life events and difficulties during the six months were established at a separate follow-up interview. The patients also reported the details of any treatment they had received from the GP during the study period.

GP management data

For each patient the GPs classified the index consultation for its psychiatric and physical content (Goldberg & Blackwell, 1970), and stated whether any current drug treatment or psychological treatment was being employed.

At the end of the study period the medical records were examined, and, together with data recorded at the follow-up interview, the management of the patients' psychiatric disorder was classified as: (a) discussion/counselling with the GP, (b) prescription of psychotropic drugs, (c) referral to a psychiatrist, psychologist or psychiatric social worker, or (d) no apparent management by the GP.

Scores and data analysis

Outcome of the psychiatric disorder after six months was assessed using the following measures of outcome: change in the HDRS scores, changes in CAS scores, and reduction in index of definition (ID) level. With regard to HDRS and CAS outcome was assessed in three ways – reduction in HDRS score, percentage reduction and final HDRS score. With regard to change in ID level the following three categories were defined: much improved (reduction of ID level to under five), somewhat improved (reduction

of ID level by one or more but still five or above), no change or worse (the same or increased ID level).

The LEDS interviews were rated in the usual way at a meeting of raters who were blind to the psychiatric scores. Data are presented for events and difficulties for six months prior to entry and for six months prior to the follow-up interview (i.e. for the six months between the two interviews). The usual ratings of the LEDS were made including independence from the psychiatric illness. Results are presented as two summary scores: one for life events (Surtees & Ingham, 1980) and one for ongoing chronic difficulties using the method of Brown *et al* (1988) – severe difficulties receive a high score, mild difficulties receive a low score and the scores are added. High scores indicate severe social problems and a reduction in the scores indicates an improvement in social problems.

Statistical significance of factors associated with severity of depression at first interview were assessed using the Mann–Whitney test or Spearman correlation coefficient. Change in HDRS scores (between first and second interview) were calculated and compared in a similar way; absolute reduction and percentage reduction were used. In order to determine which variables best predicted outcome at follow-up a series of multiple regression analyses were performed using variables available at the index consultation. These included demographic variables, previous medical and psychiatric history, duration and severity of psychiatric illness, summary scores of events and difficulties and recognition and management of the disorder by the GP.

A further set of analyses was performed with additional variables collected at follow-up. These included reduction scores in life events and difficulties, and GP management in the study at six months.

RESULTS

Over an 18-month period 267 surgery sessions were screened; 1251 GHQ–28s were returned completed. Of these, 571 (46%) scored greater than six but 114 patients spoke English with difficulty or were leaving the area soon and were not invited for the second stage of psychiatric screening. Of those eligible for a screening interview 61% (277/457) were interviewed. Nine patients who were psychotic and 86 with too few symptoms to fulfil DSM–III–R

criteria were excluded. Thus, 182 patients were identified with sufficient symptoms for a DSM–III–R diagnosis: all these patients agreed to enter the study. The mean GHQ score for the 182 was slightly higher than for the 277 but there were no significant differences for all other demographic and clinical factors.

One hundred and forty-eight (81%) of the study subjects were successfully followed-up. Of the 34 lost to follow-up, 21 left the area, 11 refused the second interview and two had incomplete data. These 34 subjects were not significantly different from those completing the study except that they had more alcohol problems (7/34 compared with 12/148). The study sample comprises the 148 patients followed-up for six months.

Two-thirds of the study group were women, and the mean age was 35 years, (range 16–78 years); 58 (39%) were single, 57 (39%), married or cohabiting and 33 (22%) were widowed or divorced. Sixty-seven patients were employed (including 17 students), 17 were housewives, 16 retired, and 48 were unemployed either through lack of work or ill health. Social class defined by last or spouses' employment was: professional and intermediate 45 (30%) skilled manual and non-manual 69 (47%), semi-skilled and unskilled 34 (23%). Seventy-six patients had no academic qualifications; of the remaining 72, 34 had a degree or higher qualification. Fifteen of the group were born outside the UK.

By chance, 74 patients had major depressive disorder and 74 patients had generalised anxiety or panic disorder. Initial PSE ID levels were one (1%) at ID level 3, 15 (10%) at ID 4, 82 (55%) at ID 5, 45 (30%) at ID 6, five (3%) at ID 7. Initial median HDRS score was 12 (interquartile range 9–15). In 66 (45%) of patients the disorder had persisted for six months or more at the index consultation, in 32 (22%) it was greater than one year.

At the first interview, a significantly higher HDRS score was recorded for patients who were unemployed, had no close confidant (Table 1) and had a high social difficulties score (Table 2); other demographic and clinical features were unrelated to initial HDRS score (first column Tables 1 and 2).

Factors associated with outcome

At follow-up, the median HDRS score had dropped to five (interquartile range 1–10).

Table I Association between severity of depression and demographic, psychiatric, social and GP management factors initially and at six months. Median scores and interquartile range (IQ) or correlation coefficient (for age, initial severity)

	Hamilton Rating Scale for Depression							
	Initial score		Six months score		Reduction in score		Percentage reduction in score	
	Median (IQ range)	P	Median (IQ range)	P	Median (IQ range)	P	Median (IQ range)	P
Age[1]	−0.035	0.34	0.207 **	0.006	−0.238 **	0.002	−0.237 **	0.002
Gender								
Male (n=46)	12(9–15)		6(2–10)		6(2–10)		50(18–87)	
Female (n=102)	12(9–15)	0.66	5(1–11)	0.80	6(1–10)	0.95	54(12–88)	0.84
Social class[1]	0.127	0.062	0.153	0.032	−0.070	0.20	−0.095	0.12
Unemployed								
No (n=104)	11(8–14) ***		4(1–9) ***		7(2–10) *		63(21–92) **	
Yes (n=44)	14(11–18)	<0.001	10(5–16)	<0.001	5(−1–9)	0.033	31(−4–59)	0.002
Education								
No exams (n=76)	13(9–16)		8(2–15) ***		5(0–9) **		33(1–77) **	
Exams (n=72)	12(9–15)	0.55	4(1–8)	<0.001	7(3–11)	0.002	63(32–92)	0.002
Has close confidant								
No (n=55)	14(10–17) *		7(3–15) **		5(0–9)		33(0–75) *	
Yes (n=93)	11(9–14)	0.011	4(1–10)	0.0013	7(2–10)	0.11	60(23–89)	0.027
Previous psychiatric history								
No (n=64)	12(9–15)		5(1–10)		7(2–10)		5(14–89)	
Yes (n=83)	12(9–15)	0.76	5(1–11)	0.24	6(1–10)	0.34	47(17–83)	0.26
Family psychiatric history								
No (n=94)	13(9–15)		6(1–10)		6(2–10)		56(18–88)	
Yes (n=54)	11(9–15)	0.23	5(1–10)	1.0	6(1–10)	0.41	48(8–88)	0.58
Initial severity of depression[1]			0.378 ***	<0.001	0.337 ***	<0.001	0.094	0.26
Duration of illness at index								
<6/12 (n=81)	11(9–14)		3(1–88) ***		7(3–11) **		67(29–92) ***	
>6/12 (n=66)	13(9–16)	0.33	9(4–13)	<0.001	5(0–8)	0.0013	31(0–63)	<0.001
Psychological problem known to GP at index								
No (n=64)	11(8–14) **		4(1–9) *		6(2–10)		56(18–89)	
Yes (n=84)	13(10–16)	0.0054	6(2–13)	0.043	6(1–10)	0.83	50(10–80)	0.29
Psychological problem managed by GP in study period								
No (n=55)	11(8–14) *		4(1–8) **		76(2–10)		67(22–92) *	
Yes (n=93)	13(10–16)	0.013	6(2–13)	0.0012	6(0–10)	0.20	47(0–79)	0.016
Prescribed psychotropic drugs								
No (n=95)	11(9–14) **		4(1–9) ***		6(2–10)		62(2–91) **	
Yes (n=53)	14(10–18)	0.0031	10(4–15)	<0.001	5(−1–10)	0.075	33(−9–63)	0.003
Psychiatric referral								
No (n=111)	12(9–15)		5(1–10)		6(1–10)		54(18–89)	
Yes (n=37)	13(10–17)	0.29	6(3–14)	0.073	7(1–9)	0.63	47(6–71)	0.33

*$P<0.05$; **$P<0.01$; ***$P<0.001$.
Significance tests: Mann–Whitney U-test, except 'Spearman's correlation coefficient.

A significant reduction in depression score (i.e. clinical improvement) during the study six months was significantly associated with younger age, being employed, higher educational level and a more recent onset (columns 3 and 4 in Table 1). More severe depression was significantly associated with greater reduction in score (column 3, Table 1) but not percentage reduction; the reverse was true for presence of a close confidant.

The reduction in depression score was not significantly associated with severity of life events and social difficulties at the time of the initial consultation, but it was significantly associated with the reduction

of both life events and difficulties during the study period (Table 2). Percentage reduction in depression score was significantly (negatively) correlated with the initial difficulty score and positively correlated with the reduction of both life events and difficulties over the study period (Table 2).

Multiple regression analysis

The first multiple regression analysis used variables available at the initial assessment to predict reduction in HDRS scores. Forward stepwise selection of variables was used, where the single best variable at predicting reduction in HDRS was chosen first, then the single variable which added the most information in addition to the first, and so on until improvement was no longer significant at the 5% level. High initial HDRS score, higher educational level and current employment were associated with greater reduction in HDRS scores (adjusted R^2=23.5%). The addition of any of the remaining 13 variables known at the index consultation did not significantly improve on these predictions.

The second analysis included the 21 variables known at follow-up, that is including change scores of severity of difficulties and treatment variables; the single best predictor was reduction in social difficulties during the study six months and the next three variables were the same as before (adjusted R^2=33.2%).

Since it was possible that reduction in social difficulties, for example return to work, might simply reflect improvement in psychiatric symptoms, the multiple regression analysis was repeated including only those social difficulties that were known to be independent of the change in psychiatric illness (e.g. continuing poor housing conditions). The same predictors emerged as before.

Three-quarters of the chronic difficulties experienced by these patients remained at the same level (i.e. same score) at follow-up as at the initial interview. For those that changed, the overall percentage change is shown in Table 3; improvement in depression was associated with improvement in chronic social difficulties in all areas except money and loneliness. It can be seen that the clearest differences between improved and non-improved subjects were in the areas of close relationships (spouse, socio-sexual), work and housing difficulties. The proportion of subjects experiencing a life event, which either neutralised a previous severe life event or reduced a difficulty was 19/79 (24%) of improvers and 7/69 (10%) of non-improvers (χ^2=4.004, d.f.=1, $P<0.05$). There was no difference in the (small) proportion of patients experiencing fresh start events.

General practitioner management

Table 1 indicates that recognition and management by the GP were associated with more severe disorder. GPs were most likely to recognise and manage the more severely depressed subjects (median HDRS score 13 compared with 11).

In 93 patients the psychiatric disorder was recognised and actively managed as follows: 30 patients by discussion/counselling without drugs, 26 treated by the GP with psychotropic drugs, and 37 patients were referred to the specialist services (27 with psychotropic drugs and 10 without). An analysis of covariance was carried out to determine whether there were any group differences in improvement after accounting for group differences in age, initial severity of depression and reduction in social difficulties: the difference between the groups was significant (P=0.035) with greatest reduction in the patients managed without psychotropic drugs and referred to mental health services (principally psychologists and psychiatric social worker). Least improvement occurred in the two groups receiving psychotropic drugs (Fig. 1).

Additional measures of outcome

The analyses were repeated using percentage reduction in HDRS score, raw HDRS score at follow-up, reduction in CAS scores and change in ID level (data not shown). The pattern of association between the demographic, psychiatric illness and social factors was almost identical to those presented for

Table 2 Correlation coefficients of Hamilton Rating Scale for Depression (HDRS) and Life Events and Difficulties summary scores

| | Hamilton Rating Scale for Depression scores | | | | | | | |
| | Initial score | | Six months score | | Reduction in score | | Percentage reduction in score | |
	Correlation	P	Correlation	P	Correlation	P	Correlation	P
Initial difficulties summary score	0.286	*** <0.001	0.310	*** <0.001	−0.127	0.061	−0.203	** 0.007
Initial events summary score	0.049	0.28	0.024	0.39	0.026	0.38	0.017	0.42
Initial physical health difficulties summary score	0.133	0.053	0.104	0.10	−0.003	0.49	−0.047	0.28
At follow-up								
Reduction in social difficulties score	0.076	0.18	−0.322	*** <0.001	0.369	*** <0.001	0.367	*** <0.001
Reduction in life events score	0.037	0.33	−0.200	0.007	0.193	0.009	0.222	** 0.003
Reduction in health difficulties score	−0.090	0.14	−0.183	* 0.013	0.125	0.064	0.153	* 0.031

*$P<0.05$; **$P<0.01$; ***$P<0.001$.
Significance test: Spearman's correlation coefficient.

Table 3 Percentage change in different types of chronic difficulties. The sample is divided into improvers (HDRS score reduction of six or more) and non-improvers (HDRS reduction less than six). Net change in difficulties (+score=improvements in the difficulties score) shown.

Type of chronic difficulty	Improvers n=79	Non-improvers n=69
Spouse	+15.8	−11.5
Children	+25	+20.9
Money	−6.7	−14.7
Subject's physical health	+6.5	−2.6
Others' physical health	+7.1	+3.8
Socio-sexual	+20	−18.2
Bereavement/loneliness	0	−5.9
Work	+32.1	−8.9
Housing	+13.1	−2.5
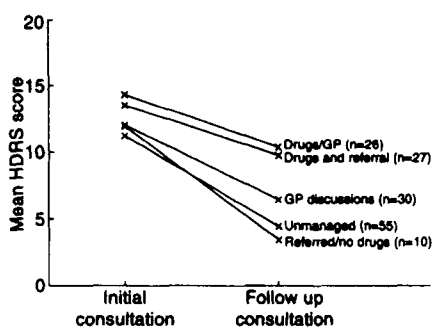
Fig. I Mean HDRS scores at follow-up interview adjusted according to mean age, initial severity and reduction in difficulties (by analysis of covariance) shown according to management group.

reduction in HDRS: reduction in chronic difficulties, educational level, employment status, family history of psychiatric illness and reduction in (Surtees) Life Events Adversity Index were the significant variables related to outcome (further details available from the author upon request).

Anxiety and depression

There was no difference in outcome for anxiety and depressive disorders: 36 out of 74 and 43 out of 74 had definitely improved at follow-up (χ^2=0.98, NS). Separate multiple regression analyses for anxiety and depressive disorders (using CAS and HDRS scores, respectively) produced similar results to those for the total group. For the 74 patients with anxiety disorders, regression analysis for reduction in CAS score using variables known at initial interview selected the same variables as mentioned above (17.8% of the variance was explained by initial CAS score and duration of disorder).

Using variables known at follow-up 28.8% of the variance was explained by two variables: reduction in events score and initial CAS score. For the 74 depressed patients, multiple regression on reduction in HDRS predicted 41.72% of the variance: reduction in chronic difficulties (adjusted R^2=22%), educational level (33.6%), initial HDRS score (37.02%) and unemployment 41.7%.

For patients with a disorder of greater than six months' duration, there was no difference in outcome between anxiety and depressive disorders (42% of each improved) but for patients with a disorder of less than six months, 29 out of 41 patients (71%) with depression improved, compared with 21 out of 40 (52%) with anxiety. The difference between these four groups was significant (χ^2=8.1, d.f.=3, P=0.043).

DISCUSSION

The aim of this study was to identify the factors most closely associated with outcome of anxiety and depressive disorders in general practice. The study required a representative sample of such disorders among routine GP attenders, standardised measures of psychological, social and treatment variables and a suitable statistical analysis. Separate psychiatric and social interviews were used to avoid any bias or contamination. A number of methodological considerations need to be considered before discussing the results in detail.

Sample

The current study recruited patients with both anxiety and depressive illnesses because these conditions overlap in general

practice patients (Von Korff et al, 1987; Ormel et al, 1990; Sartorius et al, 1993). The severity of psychiatric disorder was similar to other studies including patients with 'depression requiring treatment' (Paykel et al, 1988), but milder than that included in some treatment trials (e.g. Scott & Freeman, 1992). Like Karlsson et al (1995) and Von Korff et al (1987) we found an identical proportion of anxiety and depression.

The recruitment and follow-up rates in this study were similar to those studies which have used a comparable method. The patients lost in the sampling process had GHQ scores slightly lower than those included, so our sample was representative of the more severely ill patients seen in general practice.

Factors associated with outcome

The principal results from the regression analyses are clear. Using data available at initial assessment, severity of disorder was the best predictor of reduction of symptoms over the study six months. Using data available at the follow-up, the single best predictor was reduction in social difficulties, which remained an important predictor even when independent difficulties alone were considered.

Like Brown et al (1988) and George et al (1989) we found that quality of close relationships was very closely related to outcome. However, we did not find that fresh start events were associated with recovery (Brown et al, 1988) – this may reflect the fact that the current sample was of GP attenders, not a community sample and, in addition, the present results do not examine social data in relation to precise time of improvement.

Low educational level also emerged as an important predictor; a similar result was found in the Epidemiological Catchment Area study but only before severity of disorder and previous psychiatric history were controlled (Sargeant et al, 1990). The authors suggested that less well educated persons have more previous depression and more prolonged episodes.

GP management

The GPs were not informed of the psychiatric and social assessments and the study involved little alteration to the practice routine so the GPs usual treatment was unlikely to have been altered. The rate of referral to specialist agencies (25%) was

higher than usual (Whitehouse, 1987) but concurs with previous reports of general practices which have close liaison with psychiatric services (Tyrer *et al*, 1988).

The effect of change in social difficulties, initial severity of depression and demographic factors are so powerful in determining outcome that they swamp any effect of GP management. The effect of the latter can therefore best be observed by the results shown in Fig. 1, when these factors were controlled.

Division of patients into groups according to severity (Fig. 1) helps to clarify previous data concerning outcome. For example, the conflicting studies of the efficacy of psychosocial treatments in primary care (Brown & Schulberg, 1995), including the role of the clinical psychologist in primary care, probably reflect different selection of patients. The response of acutely ill and chronically ill patients may affect the results of treatment trials (Corney, 1981).

Like Coyne *et al* (1995) and Dowrick & Buchan (1995), we found that GPs were more likely to recognise psychiatric disorder when it is more severe; undetected disorder is more frequently missed but stands a higher chance of spontaneously improving.

Ormel *et al* (1990) found recognition of disorder was only related to improved outcome in those patients who had a low PSE score (<10). It is possible that the benefits of increased *recognition* in milder cases need to be distinguished from the benefits of improved *treatment* of recognised (severe) cases, if recommendations for the treatment of depression in primary care are to be effective. The small number of patients in the current study who were referred but without drug treatment (mostly to psychiatric social worker and psychologist) had mild disorder, which responded particularly well to treatment.

It appears that the GPs in the present study were using psychotropic drugs in the patients most likely to benefit from antidepressants, that is those with an HDRS score of 13 or more (Paykel *et al*, 1988); these patients continued to have depressive symptoms throughout the six months. No detailed data regarding drug dosage were collected.

This study has demonstrated the complexity of this area of research and the findings must be regarded as preliminary; however, it has several implications for the design of intervention studies in primary care. The selection of subjects is crucial. The proportion with acute and chronic disorder may determine the result. Another study has suggested that patients with depression

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lasting for more than four months have a much slower response rate and that this criterion should be incorporated into the design of antidepressant treatment trials (Coryell *et al*, 1994).

Further research is needed to assess whether specific treatments are beneficial for anxiety and depression in primary care. Even if treatment with antidepressants is used (Paykel *et al*, 1988), our data indicate that help with social problems is very relevant as reduction of marked social difficulties is the main correlate of improvement in anxiety and depression.

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