Clinical psychology in general practice: a cohort study

Robyn F Vines, Jeffrey C Richards, Don M Thomson, Margaret Brechman-Toussaint, Michelle Kluin and Louise Vesely

ABSTRACT

Objective: To evaluate whether a collaborative model of mental healthcare involving general practitioners and clinical psychologists benefits patients with common mental disorders in primary care.

Design and participants: Cohort study of 276 general practice patients with mental health problems receiving collaborative treatment from clinical psychologists and GPs compared with a normative sample of 198 patients attending the same general practice surgeries.

Setting: Nine general practices in three regional cities (Bathurst, Armidale and Ballarat) and two single-doctor practices in two rural and remote townships (Rylstone and Trundle). Data were collected in Bathurst, Rylstone and Trundle during 2001 and 2002 and in Ballarat and Armidale in 2002.

Intervention: Full assessment, case formulation and "focussed psychological interventions" relevant to the patient's condition.

Main outcome measures: Level of psychological dysfunction assessed before and after the intervention, using the DASS (Depression, Anxiety and Stress Scales), GHQ (General Health Questionnaire) and GWBI (General Well Being Index) scales.

Results: After the intervention, average scores in the treatment group decreased significantly ($P < 0.001$) on all DASS and GHQ measures and increased on the GWBI, indicating a positive change in the patients' mental health. The follow-up scores of the treatment and normative groups did not differ significantly on any of these measures.

Conclusion: Preliminary findings suggest that collaborative care involving GPs and clinical psychologists provides significant gains in patients' mental health.

MJA 2004; 181: 74–77

About 23% of Australians report at least one mental disorder in any 12-month period,[1] and between 19% and 40% of people presenting to general practitioners have mental health difficulties.[2,3] Most people with mental illness are now cared for in the community — by GPs, psychiatrists and community mental health teams.[4,5] However, in Australia, less than half of the adults (38%) and less than a third of the children (29%) with mental ill-health receive appropriate treatment.[6]

Recent federal government health policy has fostered a shift towards greater involvement of GPs in managing patients with common mental illnesses.[7,8] However, there are some practical limitations to this new emphasis: the already substantial workload of many GPs, and their varying capacities to assess, diagnose and treat psychological disorders. There has therefore been a growing emphasis on developing collaborative models involving psychologists to provide multidisciplinary care in general practice. In the UK, psychologists have been closely involved in primary mental healthcare since the 1970s, when clinical psychology was endorsed as part of the public health sector.[9]

Our study aimed to (i) evaluate whether a collaborative model of mental healthcare involving GPs and clinical psychologists benefits patients with common mental illnesses, and (ii) develop a model of early specialist intervention by psychologists for patients with common mental illnesses in primary care.

METHODS

The Clinical Psychology in General Practice Project, which began in 1998, is testing the efficacy of introducing clinical psychology services into the medical general practice setting in rural and regional areas and developing a model of early intervention by psychologists for primary care patients with common mental illnesses. Before the project, GPs in the Central West of New South Wales managed most mental health issues on their own, with sporadic access to limited mental health services within the region. This is also the case for GPs working in other non-metropolitan regions in Australia.

Data on the collaborative model were collected during a 2-year trial (2001–2002) from nine group general practices in three regional cities (Bathurst and Armidale in NSW, and Ballarat in Victoria), and two solo practices in two rural and remote NSW townships (Rylstone and Trundle).

Patient selection

Any patient with a common mental illness (primarily depression and/or anxiety), whom participating GPs felt might benefit from psychological intervention, was eligible. Once consent was obtained, the patient was referred by the GP to the "in-house" clinical psychologist or clinical psychology registrar (collocated in the general practice) for psychological intervention in collaboration with the GP. If feasible, an initial, short, joint consultation between the patient, GP and clinical psychologist/registrar was held before a full psychological assessment.

Intervention

The intervention comprised six sessions (with six more if needed, for more complex conditions) — full assessment, case formulation and choice of the relevant "focussed

Arts Faculty, Charles Sturt University, Bathurst, NSW.
Robyn F Vines, MSc, FAPS, Clinical Psychologist, Senior Research Fellow, Director of the General Practice Project; Don Thomson, PhD, FAPS, Professor of Psychology, Co-Chief Investigator of the General Practice Project; Michelle Kluin, BLMC, Project Administrator, General Practice Project; Louise Vesely, Project Research Assistant, General Practice Project.
Department of General Practice, Monash University, East Bentleigh, VIC.
Jeffrey C Richards, PhD, FAPS, Professor of Psychology, Director of Primary Care Research, Co-Investigator of the General Practice Project.
School of Psychology, University of New England, Armidale, NSW.
Margaret Brechman-Toussaint, PhD, Director of Clinical Training/Clinical Psychology Lecturer, Co-Investigator of the General Practice Project.
Reprints: Professor Jeffrey C Richards: Jeffrey.Richards@med.monash.edu.au; Ms Michelle Kluin, Charles Sturt University, Heffron House, Bathurst, NSW 2795. mkluin@csu.edu.au

1 Comparison of scores of intervention and control participants completing initial and follow-up mental health measures

Measure	*n*	Initial mean score (SD)	Follow-up mean score (SD)	Difference in mean score*	95% CI of difference	*P*
A: Intervention group						
DASS Depression	176	20.38 (12.03)	7.30 (9.49)	13.08	11.30, 14.85	< 0.001
DASS Anxiety	177	15.03 (10.95)	6.40 (8.04)	8.63	7.23, 10.03	< 0.001
DASS Stress	177	22.71 (10.86)	10.56 (10.12)	12.15	10.51, 13.79	< 0.001
General Health Questionnaire (total)	173	39.35 (17.05)	17.54 (14.12)	21.81	19.23, 24.39	< 0.001
General Well Being Index	178	36.27 (15.93)	59.12 (16.56)	−22.85	−25.61, −20.09	< 0.001
B: Control group						
DASS Depression	97	7.46 (9.06)	6.02 (7.72)	1.44	0.08, 2.79	0.37
DASS Anxiety	97	6.51 (9.03)	4.86 (6.92)	1.65	0.49, 2.64	0.003
DASS Stress	97	10.21 (9.10)	9.10 (8.10)	1.11	−0.03, 2.33	0.65
General Health Questionnaire (total)	95	22.07 (13.86)	18.95 (12.10)	3.13	−0.02, 5.44	0.19
General Well Being Index	93	56.78 (18.81)	59.45 (16.01)	−2.67	−5.38, −0.01	0.051

*Difference in means = mean initial score minus mean follow-up score. DASS = Depression, Anxiety and Stress Scale.

psychological interventions" for the patient's condition (eg, individually targeted and tailored cognitive behaviour therapy), which were then provided. All clinical psychology registrars were closely supervised by a senior clinical psychologist. Patients were seen by the psychologists *pro bono*. Ongoing face-to-face discussion and consultation between GPs and clinical psychologists occurred during the course of the patients' treatment.

Normative comparison group

We considered random allocation of patients requiring treatment for a mental illness to intervention or control groups. However, both for logistical and ethical reasons (ie, duty of care to patients clearly requiring psychological intervention), this was not done. Members of the comparison group were patients who had not been referred for psychological treatment by their GP, but were attending the same general practice. If any of the comparison participants scored within the severe to extremely severe ranges on the Depression, Anxiety and Stress Scales (DASS)[10] or General Health Questionnaire (GHQ),[11] the GP referred them for psychological intervention as part of the intervention group. This, of course, skewed the initial scores of the comparison group on the mental health measures towards the normal range. Our comparison "control" group was therefore a normative sample drawn from a similar demographic population attending the GPs' surgeries.

Data collection

Measures: Both intervention- and control-group patients were asked to complete three validated mental health measures: the DASS, the GHQ and the General Well Being Index (GWBI).[12] DASS subscores measure *depression* (mild to moderate severity 12–20, severe to extremely severe 27–42); *anxiety* (mild to moderate 9–14, severe to extremely severe 20–42); and *stress* (mild to moderate 16–26, severe to extremely severe 34–42). The GHQ has four seven-item subscales: somatic symptoms, anxiety, social functioning and depression. A clinical threshold score lies between 16 and 20, from summed scores over the four subscales. No clinical threshold score exists for the General Well Being Index, a 22-item measure of general wellbeing which correlates inversely with the DASS and GHQ.

The intervention group completed all three mental health measures at their first session and again after their final treatment session with the psychologist. The control group completed initial mental health measures at the time of recruitment and were sent the same measures to complete 8 weeks later, which was about the same time interval as those receiving the intervention.

Ethics approval

The study was approved by the Charles Sturt University, University of Ballarat, University of New England and University of Sydney ethics committees in 2001.

Statistical methods

We used SPSS for all for statistical analyses.[13] There were two major issues of interest:

- Whether, within the intervention group, the initial scores on the mental health measures differed significantly from the follow-up scores; and
- Whether the scores on the initial and follow-up mental health measures differed significantly between the control and intervention groups.

The total scores and subscores of DASS and GHQ, and GWBI were assumed to be normally distributed for each group on each testing occasion. To answer the first question a paired-samples *t*-test was used which yielded a difference in means, a 95% confidence interval of this difference, and a two-tailed measure of the significance of the *t*-test. An independent-samples *t*-test was used to answer the second question, which once again yielded a difference in means, a 95% confidence interval of this difference, and a two-tailed test of significance of the *t*-test. Equal variances were assumed.

Because differences between intervention and control groups may have been confounded by demographic variables such as age, sex and socioeconomic status, the intervention and control groups from the Bathurst practice were compared to determine whether they differed on these parameters, as data were retrospectively available only for Bathurst patients. Cross-tabulations

2 Comparison of initial and follow-up scores of control and intervention groups on mental health measures

Measure	Control group		Intervention group		Difference in means*	95% CI of difference	*P*
	n	Mean score (SD)	*n*	Mean score (SD)			
A: Initial scores							
DASS Depression	193	8.86 (10.38)	274	21.17 (12.19)	−12.31	−14.37, −10.25	< 0.001
DASS Anxiety	193	7.26 (9.12)	274	15.72 (10.95)	−8.46	−10.29, −6.63	< 0.001
DASS Stress	193	11.90 (9.86)	273	23.15 (10.95)	−11.26	−13.16, −9.35	< 0.001
General Health Questionnaire (total)	194	23.47 (14.71)	270	39.78 (16.95)	−16.31	−19.21, −13.41	< 0.001
General Well Being Index	192	55.17 (18.45)	272	35.95 (16.21)	19.22	15.99, 22.43	< 0.001
B: Follow-up scores							
DASS Depression	98	6.37 (8.41)	180	7.30 (9.39)	−0.93	−3.10, 1.41	0.398
DASS Anxiety	98	5.14 (7.41)	181	6.41 (7.97)	−1.27	−3.17, 0.69	0.183
DASS Stress	98	9.40 (8.57)	181	10.49 (10.02)	−1.09	−3.41, 1.33	0.341
General Health Questionnaire (total)	98	20.03 (14.69)	178	17.46 (14.05)	2.57	−0.77, 6.34	0.160
General Well Being Index	96	59.27 (16.07)	180	59.25 (16.60)	0.02	−4.31, 3.90	0.989

* Difference in means = mean initial or follow-up score for the control group minus mean initial or follow-up score for the intervention group. DASS = Depression, Anxiety and Stress Scale. Positive General Well Being Index scores indicate improved levels of wellbeing.

were calculated for these demographic variables and a Pearson χ^2 test with a two-tailed test of significance was used to determine whether the differences between the intervention and control groups were significant.

RESULTS

Intervention group

By the end of 2002, 276 patients had received treatment through the project. We estimated that the consent/participation rate was high (about 95%), although no formal record was kept of consent rates. Sixty-six per cent of these patients ($n = 181$) completed initial and follow-up measures: 123 (68%) were female and 58 (32%) were male. Patients completing both initial and follow-up measures were representative of the total group in terms of both sex ratio and initial scores on the measures. The 66% return rate (ie, 34% loss to follow-up) was the result of a number of factors, including our early emphasis on providing healthcare rather than insisting on the questionnaires being completed. Some dependence on postal returns after the final treatment session resulted in further attrition.

On the initial measures, 51% (of the 276 intervention participants) scored at the extremely severe or severe level for both depression and anxiety, while 42% scored within this range for stress. There was a high degree of comorbidity within these illnesses (eg, 67% of participants with an extremely high level of depression also had an extremely high level of anxiety).

Twenty-two patients (8%) appeared to be in the normal range on all three DASS measures, suggesting either an unnecessarily high referral rate by GPs, or that the measures were not detecting conditions that GPs were unable to assess clinically.

After treatment, average scores had improved significantly on all DASS, GHQ and GWBI measures (Box 1A).

Control group

Owing to the difficulties associated with control recruitment (outlined above) and postal returns for control-group follow-up assessment, the control group was smaller than the intervention group, with 198 participants. Of these, 129 (65%) were female and 69 (34%) were male. Ninety-seven participants (49%) completed both initial and follow-up measures. Of the 198 control-group participants, 126 (64%), 116 (59%) and 124 (63%) scored in the normal range for depression, anxiety and stress, respectively. Mean scores on the follow-up measures in the control group were not significantly different from those on the initial measures (Box 1B).

Comparison of intervention and control groups

Comparison of initial measures across the intervention and control groups indicated a significant difference between groups, with the intervention group manifesting significantly higher scores on the DASS and GHQ and significantly lower on the GWBI (Box 2A).

Comparison of follow-up measures showed that there were no significant differences between the intervention group and the control group (Box 2B).

Comparison based on demographic data. The Bathurst control group did not significantly differ from the Bathurst intervention group on the basis of sex, age or income level, as shown by the Pearson χ^2 at the end of each cross-tabulation in Box 3. There were slightly higher percentages of younger patients and patients in the lowest-income quintile in the intervention group, but overall the cross-tabulation percentages were roughly comparable.

DISCUSSION

Our results suggest that clinical psychologists working with GPs in primary care can have a positive effect on the mental health of patients identified by their GP as being psychologically distressed. Comparison before intervention with a normative sample of people drawn from a similar demographic population indicated, as expected, significantly higher levels of psychological disturbance in the intervention group. Average scores in the intervention group significantly improved on all measures (DASS, GHQ and GWBI) after the intervention, with no significant difference between the intervention

3 Comparison of intervention and control groups from Bathurst on the basis of demographic data

Attribute	Control group Number (%)	Intervention group Number (%)	Total
Sex			
Male	30 (28.8%)	42 (24.3%)	72
Female	74 (71.2%)	131 (75.7%)	205
Total	**104**	**173**	**277**
$\chi^2 = 0.71$; $P = 0.40$			
Age			
15–29	14 (15.7%)	35 (24.8%)	49
30–39	20 (22.5%)	33 (23.4%)	53
40–49	23 (25.8%)	34 (24.1%)	57
50–59	14 (15.7%)	24 (17.0%)	38
60–81	18 (20.2%)	15 (10.6%)	33
Total	**89**	**141**	**230**
$\chi^2 = 5.77$; $P = 0.22$			
Income quintile (based on address)*			
Lowest	10 (10.2%)	25 (16.8%)	35
Second	41 (41.8%)	56 (37.6%)	97
Third	23 (23.5%)	45 (30.2%)	68
Fourth	8 (8.2%)	14 (9.4%)	22
Highest	5 (5.1%)	6 (4.0%)	11
Unknown address	11 (11.2%)	3 (2.0%)	14
Total	**98**	**149**	**247**
$\chi^2 = 12.15$; $P = 0.03$			

* For the income quintile, we used Australian Bureau of Statistics index of economic resources (family income and expenditure, family assets and dwelling size) (Socio-Economic Indexes for Areas [SEIFA]). This index is grouped into quintiles, with Bathurst's population covering all five. We allocated control- and treatment-group patients to quintiles on the basis of their address as shown on surgery records.

and the normative comparison group at follow-up.

The main limitation of the study was that we could not randomly allocate patients to control and treatment groups. This would have provided comparable control data in patients with similar levels of mental disorder. Further, relatively low completion rates for the follow-up questionnaires (66% of the intervention group and 49% of the control group) may have biased the results. However, it was found that the intervention subgroup with complete data had similar initial scores and sex ratios to the larger group from which it was drawn, suggesting comparability. This was also true for the control group. A number of possible confounders (eg, sex, age and socioeconomic status) may have limited the comparison between groups. However, data collected on the Bathurst sample (both intervention and control groups) indicated that there were no significant differences between the groups.

Our preliminary findings suggest that this collaborative model of mental healthcare involving GPs and clinical psychologists provides positive gains for patients with common mental disorders and that current government support for such services should be continued.

ACKNOWLEDGEMENTS

Thanks are due to the Australian Department of Health and Ageing for its generous support of this project over 5 years. We would also like to thank the GPs involved in our trial of the collaborative model. Without their encouragement the research would not have been possible.

COMPETING INTERESTS

None identified.

REFERENCES

1 Andrews G, Henderson S, Hall W. Prevalence, comorbidity, disability and service utilisation: overview of the Australian National Mental Health Survey. *Br J Psychiatry* 2001; 178: 145-153.
2 Aloizos J, Harris M, Hickie I, et al. The mental health agenda and divisions of general practice. Sydney: University of Sydney, 1998.
3 Bhasale A, Britt H, Charles J, et al. General practice activity in Australia 1998-1999. Canberra: Australian Institute of Health and Welfare, General Practice Series, 1999. (Catalogue No. GEP 2.)
4 Creed F, Gask L, Sibbald G. Evaluating models of working at the interface between mental health services and primary care. *Br J Psychiatry* 1997; 170: 6-11.
5 Keks NA, Altson BM, Sacks TL, et al. Collaboration between general practice and community psychiatric services for people with chronic mental illness. MJA Practice Essentials – Mental Health, 1998. Available at: www.mja.com.au/public/mentalhealth/articles/keks2/keks2.html (accessed Jun 2004).
6 Sawyer M, Arney F, Baghurst P, et al. The mental health of young people in Australia: the child and adolescent component of the National Survey of Mental Health and Well Being. Canberra: AGPS, 2000.
7 Commonwealth Department of Health and Aged Care. National Action Plan for Promotion, Prevention and Early Intervention for Mental Health. Canberra: Mental Health and Special Programs Branch, The Department, 2000.
8 Australian Health Ministers. National Mental Health Plan 2003–2008. Canberra: Australian Government.
9 Trethowan W. The role of psychologists in the health services: report of the subcommittee. London: Department of Health and Social Security, 1977.
10 Lovibond SH, Lovibond PF. Manual for the depression anxiety stress scales. 2nd edition. Sydney: Psychology Foundation; 1995.
11 Goldberg D, Williams P. A user's guide to the General Health Questionnaire. Berkshire: NFER Nelson; 1991.
12 Dupey HJ. Self-representations of general psychological well-being of American adults. Los Angeles: American Public Health Association Meeting, 1978.
13 SPSS [computer program], version 10. Chicago, Ill: SPSS Inc, 1999.

(Received 17 Mar 2004, accepted 10 Jun 2004) ❑