The effectiveness of psychological intervention in primary care: a comparative analysis of outcome ratings

COLIN A. ESPIE, BSc, MAppSc
Senior Clinical Psychologist, Udston Hospital, Hamilton

JIM WHITE, BA, MAppSc
Senior Clinical Psychologist, Udston Hospital, Hamilton

SUMMARY. A series of consecutively referred outpatients were independently rated, on a treatment outcome measure, by psychologists, general practitioners and the patients themselves. Statistical comparisons revealed high inter-rater agreement and indicated that 43% of the patients had reliably achieved either moderate or marked improvement and 75% had shown at least slight improvement. Favourable outcome was particularly associated with the psychological treatment of anxiety and stress disorders. These results are discussed with reference to previous reports.

Introduction

THE literature on clinical psychology and primary care has generally reported studies of the referring patterns of relatively small numbers of general practitioners (12 or less) and of patient samples of fewer than 200.[1-6] A study by Jerrom and colleagues,[7] however, reported a district service where 55 general practitioners generated a total of 420 referrals during a two-and-a-half-year period, and, more recently, White and Espie have completed a study categorizing 767 patients referred over a four-year period.[8]

Encouraging post-treatment 'improvement' rates of over 70% and significant reductions in general practice[5,6] attendances and prescriptions[4,5] have been challenged by Jerrom and colleagues[9] who reported that psychological treatment produced 'definite benefit' in only 56% of a sample of 261 cases according to ratings by general practitioners. It may be, therefore, that patients, therapists and general practitioners perceive treatment differently, with general practitioners providing the most conservative estimates of benefit. Further doubt regarding the effectiveness of psychological treatment was raised by a controlled study of 42 consecutive referrals[10] where no significant differences in outcome between treatment and control groups were found at discharge, other than a lower prescription rate for psychotropic drugs in the treatment group. This difference was not maintained at follow-up.

This paper reports treatment outcome ratings for a series of consecutively referred patients who were seen by the authors during 1984, and is the first study to report a comparison of independent ratings made by general practitioners, patients and psychologists.

Method

The subjects were 132 adult outpatients (42 men, 90 women) who had been referred consecutively and who had attended a minimum of three appointments and could, therefore, be considered to have received active psychological therapy. Treatment procedures were broadly along behavioural lines. Since it was not possible to use standard measures to assess treatment outcome, available data from patients' self-monitoring and self-ratings and therapists' assessments based upon discharge letters were closely inspected and integrated into a global therapist rating, similar to the procedure used by Kirk.[11] It was felt that this procedure would provide a useful and valid measure since it adequately reflected a carefully considered clinical appraisal for each patient. Ratings were made on a five-point scale where 1 represented deterioration, 2 no change, 3 slight improvement, 4 moderate improvement and 5 marked improvement. The patients and their general practitioners were contacted by post and asked to complete the same rating scale in order to provide two independent measures of treatment outcome.

It should be noted that, at the time of assessment, patients had been discharged from therapy for a mean period of three months (approximate range 0–6 months), and therefore the ratings of the patients and general practitioners contain an element of follow-up. The psychologists' ratings, however, refer to the immediate post-treatment stage.

Results

Ratings were obtained from 48 general practitioners on 112 patients and 105 patients returned their self-ratings (return rates of 85% and 80% respectively). Therapists completed ratings on every case. A total of 118 data sets were obtained comprising at least two of the three ratings, and 99 data sets had all three ratings. These 99 cases (75% of the sample) were used as the subjects for study in order to reliably compare outcome scores across raters. In order to investigate the possibility that missing patient data were biased towards the less improved end of the scale a Mann-Whitney U-test was conducted comparing psychologist ratings on these cases with corresponding ratings on the sample studied. This analysis revealed a non-significant difference ($U=80.0$, $P<0.81$) confirming the validity of restricting the final sample to 99 cases. The sample of 99 patients was also representative of a larger group of 767 patients referred to the psychologist who were assessed in the same way.[8] There was no significant difference between the Kincey categories[11] (described later) of the two groups or in the amount of therapy time they received.

Tables 1–3 present data on the 99 patients comparing ratings by the psychologist and general practitioner, psychologist and patient and general practitioner and patient respectively, and each table reveals the degree of concordance between pairs of raters. It should be noted that none of the raters considered that deterioration had occurred as a result of psychological treatment and thus a 4 x 4 matrix resulted for each comparison.

Psychologists rated 42 patients and general practitioners rated 43 patients as moderately improved compared with patients who rated only 30 of themselves in this category. However, 34 patients rated themselves in the category of marked improvement, considerably more than either of the professional groups. Moderate or marked improvement was achieved in 66 cases according to the ratings of the psychologists, 61 according to the general practitioners, and 64 according to the patients. It would appear, therefore, from this simple analysis, that a group mean

Table 1. Comparison of ratings by the psychologist and general practitioner (row and column respectively) on the therapy outcome scale. The 4 x 4 matrix allocates each of the patients ($n=99$) to a particular cell in relation to the interaction of his/her rating scale scores.

	Rating by general practitioner				
Rating by psychologist	No change	Slight improvement	Moderate improvement	Marked improvement	Total
No change	7	4	2	1	14
Slight improvement	5	7	7	–	19
Moderate improvement	–	10	24	8	42
Marked improvement	1	4	10	9	24
Total	13	25	43	18	99

Table 2. Comparison of ratings by the psychologist and patient (row and column respectively) on the therapy outcome scale for 99 patients.

	Rating by patient				
Rating by psychologist	No change	Slight improvement	Moderate improvement	Marked improvement	Total
No change	10	2	2	–	14
Slight improvement	5	7	3	4	19
Moderate improvement	2	8	18	14	42
Marked improvement	–	1	7	16	24
Total	17	18	30	34	99

Table 3. Comparison of ratings by the general practitioner and patient (row and column respectively) on the therapy outcome scale for 99 patients.

	Rating by patient				
Rating by general practitioner	No change	Slight improvement	Moderate improvement	Marked improvement	Total
No change	8	4	–	1	13
Slight improvement	5	5	6	9	25
Moderate improvement	3	7	19	14	43
Marked improvement	1	2	5	10	18
Total	17	18	30	34	99

of 64 patients who were at least moderately improved is representative of the data. Similarly, it would appear that approximately 15 patients showed no improvement.

In order to investigate how closely pairs of raters agreed, the three sets of ratings were statistically analysed using the chi-square test which revealed highly significant effects within each of the three comparisons (all $P<0.001$, 9 df). These results reflect the following inter-rater agreement rates for patients showing (a) moderate or marked and (b) at least slight improvement: psychologist/general practitioner agreement (a) 51 cases (b) 83; psychologist/patient agreement (a) 54 (b) 82; general practitioner/patient agreement (a) 48 (b) 82. Table 4 gives the number of patients that raters exactly agreed about, and agreed about within one rating scale point. Inspection of Table 4 reveals that approximately 47 paired ratings were identical, and around 90 were within one scale point.

Table 4. Comparison of pairs of raters. The number of cases (total 99 cases) for which exact agreement and agreement within one scale point was achieved.

	Psychologist		General practitioner	
	Exact agreement	Agreement within one point	Exact agreement	Agreement within one point
Psychologist	–	–	47	95
Patient	51	91	42	83

The Kendall coefficient of concordance (W) was then computed to determine the association among sets of ratings. Inter-rater reliability was found to be highly significant ($W=0.668$, $P<0.001$) confirming that psychologists, general practitioners and patients were closely agreed in their ratings of treatment outcome. Exact agreement among all three raters occurred in 26 cases and 77 ratings agreed within one scale point. This latter figure indicates that the predictive value of one rater's outcome rating was limited by a 23% risk that other ratings would have differed appreciably (that is, by more than one point) for any given patient. Overall agreement on either moderate or marked improvement was achieved for 43 cases and all three raters agreed that 75 cases had demonstrated at least slight improvement.

In order to determine whether improvement was greater in some categories of problems than in others further analysis was conducted by grouping patients according to the Kincey classification system.[12] This provided three subgroups of patients — anxiety and stress disorders ($n=72$); interpersonal, social and marital problems ($n=16$); and habit and behavioural problems ($n=11$). Figure 1 shows the differential response to therapy of these three groups. It was felt that using a composite rating was simpler than showing ratings for each set of raters separately but nonetheless valid given the high levels of concordance achieved. Patients suffering from anxiety disorders demonstrated the best response to treatment with 71% of patients achieving a composite score greater than or equal to 11 (approximating to moderate or marked improvement). Patients suffering from interpersonal and habit disorders were more evenly distributed across the rating scale with only 50% and 54% of cases respectively achieving this level of improvement. These results indicate that the previously discussed overall improvement rates reflect the superior response to treatment of this largest group of patients who presented with a mixed group of anxiety disorders. It was also of interest to consider the inter-rater reliability within each of these three subgroup classifications. Highly significant associations were achieved for patients with anxiety disorders ($W=0.591$, $P<0.001$), interpersonal problems ($W=0.778$, $P<0.005$) and habit problems ($W=0.730$, $P<0.01$), indicating that the level of inter-rater agreement, already established for the whole group, was also reflected within each subgroup of the sample population.

Discussion

Previous studies have generally reported only one rater's perception of outcome whereas this paper has attempted to evaluate the therapeutic benefits of psychological treatment from the standpoint of general practitioner, therapist and patient. There are two principal advantages to adopting this approach. First,

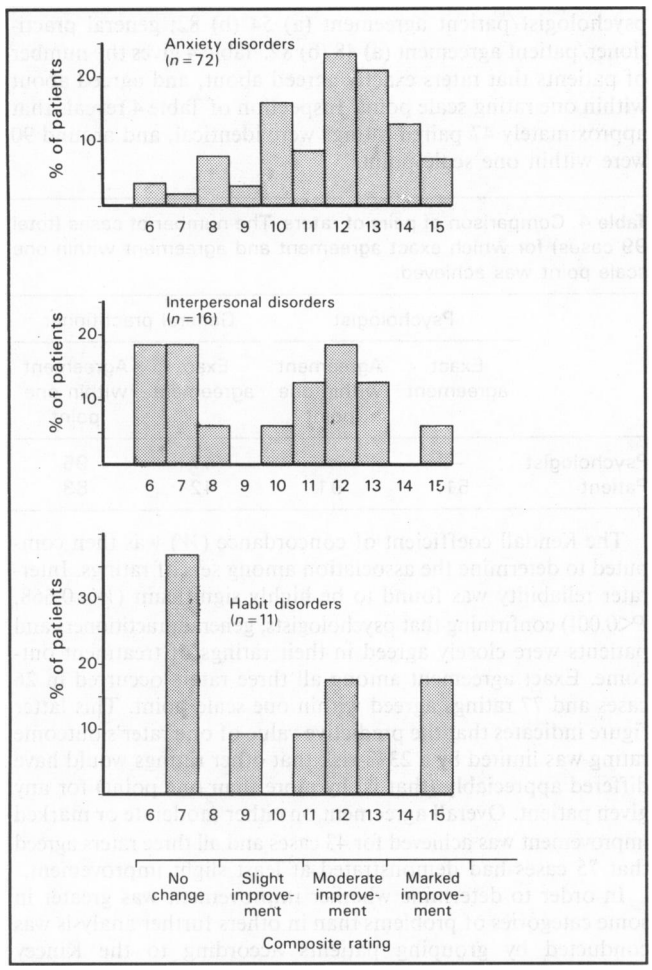

Figure 1. *Comparison of outcome, as measured by a composite score (psychologist + general practitioner + patient, ranging from 2+2+2=6 to 5+5+5=15), for each of the three Kincey categories.*

it yields a more conservative and reliable estimate of treatment gain, and secondly, it provides an index of concordance which highlights the strengths and limitations of generalized statements of therapy outcome based on the judgement of one rater.

The various analyses conducted illustrate the variability in results which can be obtained depending upon the criteria adopted for defining improvement. Considered in isolation, any one set of ratings indicates a moderate to marked improvement rate of approximately 64%, which is intermediate between the discrepant rates reported in previous studies.[5,6,9] However, in spite of the statistical tests indicating highly significant levels of overall association among the ratings, it is clear that there was not close agreement for every case. Pairs of ratings achieving at least moderate improvement were concordant for approximately half of the patient sample, but this figure reduced to 43% when the criterion for reliable improvement was defined as agreement among all three sets of raters. There are, therefore, three substantially different figures which might be taken as the improvement rate in this study, and indeed, these probably reflect the breadth of methodology employed in past research. However, substantial improvement has only been established for 43% of patients, and 75% reliably obtained at least slight benefit from treatment. According to less stringent criteria, a proportion of the remainder may have improved to some extent, but in these cases the predictive validity of one rater's judgement is limited by the fact that one or both of the other raters disagreed with that judgement.

The superior response to treatment of those patients with anxiety disorders suggests a need for greater selectivity in the range of service offered to general practitioners by psychologists, both in the interests of clinical effectiveness, and the prudent allocation of already limited resources. Indeed, a moderate to marked improvement rate of 43% might be interpreted as disappointing, bearing in mind that part of the rationale for intervention at the primary care level is that it facilitates the early detection and rapid elimination of psychological disorders before they become severe.[3] Clinical psychologists would hope to achieve at least a similar rate of improvement with most outpatients, irrespective of the context in which consultation takes place, which suggests that either the preventive elements of therapy programmes are ineffective or that problems are already entrenched by the first level of referral. What, therefore, is the advantage of a psychological service in primary care apart from social convenience for patients, general practitioners and psychologists themselves?[13,14]

Future research studies should aim to identify those factors which are predictive of outcome, and should investigate the maintenance of improvement over time. In addition, all studies to date have reported individual outpatient therapy, which is indeed the most usual form of behavioural management, but it may be that the use of group programmes and/or a more directly educational approach to problem solving would prove equally effective. The psychologist's role as a teacher of self-management skills is perhaps most appropriate at the primary health care level where the truly preventive role of intervention remains to be evaluated. Similarly, the training of other professional groups as behavioural therapists has not been investigated in any systematic way. The authors are continuing to investigate these areas and hope to be able to provide further reports in due course.

References

1. McAllister TA, Philip AE. The clinical psychologist in a health centre: one year's work. *Br Med J* 1975; **4:** 513-514.
2. McPherson IG, Feldman MP. A preliminary investigation of the role of the clinical psychologist in the primary care setting. *Bull Br Psychol Soc* 1977; **30:** 342-346.
3. Johnston M. The work of a clinical psychologist in primary care. *J R Coll Gen Pract* 1978; **28:** 661-667.
4. Ives G. Psychological treatment in general practice. *J R Coll Gen Pract* 1979; **29:** 343-351.
5. Koch HCH. Evaluation of behaviour therapy intervention in general practice. *J R Coll Gen Pract* 1979; **29:** 337-340.
6. Reid P, Kahn SM. Referrals to clinical psychologists: do results match expectations? *Practitioner* 1983; **227:** 99-100.
7. Jerrom DWA, Gerver D, Simpson RJ, Pemberton DA. Clinical psychology in primary care — issues in the evaluation of services. In: Main CJ (ed). *Clinical psychology and medicine.* London: Plenum, 1982.
8. White J, Espie CA. Clinical psychology and general practice: a four year review. *Health Bull (Edinb)* 1986 (in press).
9. Jerrom DWA, Simpson RJ, Barber JH, Pemberton DA. General practitioners' satisfaction with a primary care clinical psychology service. *J R Coll Gen Pract* 1983; **33:** 29-31.
10. Earll L, Kincey J. Clinical psychology in general practice: a controlled trial evaluation. *J R Coll Gen Pract* 1982; **32:** 32-37.
11. Kirk JW. Behavioural treatment of obsessional-compulsive patients in routine clinical practice. *Behav Res Ther* 1983; **21:** 57-62.
12. Kincey JA. General practice and clinical psychology — some arguments for a closer liaison. *J R Coll Gen Pract* 1974; **24:** 882-888.
13. Hood JE. Clinical psychology and primary care: a plea for restraint. *Bull Br Psychol Soc* 1979; **32:** 422-423.
14. Spector J. Clinical psychology and primary care: some ongoing dilemmas. *Bull Br Psychol Soc* 1984; **37:** 73-76.

Address for correspondence

Mr C. Espie, Department of Psychological Medicine, University of Glasgow, 6 Whittingehame Gardens, Great Western Road, Glasgow G12 0AA.