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BRIEF COMMUNICATION

Does problem-solving treatment work through resolving problems?

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ABSTRACT

Background. A randomized controlled trial of problem-solving treatment, antidepressant medication and the combination of the two treatments found no difference in treatment efficacy for major depressive disorders in primary care. In addition to treatment outcome, the trial sought to determine possible mechanisms of action of the problem-solving intervention.

Method. Two potential mechanisms of action of problem-solving treatment were evaluated by comparison with drug treatment. First, did problem-solving treatment work by achieving problem resolution and secondly, did problem-solving treatment work by increasing the patients' sense of mastery and self-control?

Results. Problem-solving treatment did not achieve a greater resolution in the patients' perception of their problem severity by comparison with drug treatment, neither did problem-solving treatment result in a greater sense of mastery or self-control.

Conclusions. The results from this study did not support the hypotheses that for patients with major depression, by comparison with antidepressant medication: problem-solving treatment would result in better problem resolution; or that problem-solving treatment would increase the patients' sense of mastery and self-control.

INTRODUCTION

Problem-solving treatment is a brief, practical psychological treatment that has been evaluated for the treatment of depressive and emotional disorders in primary care. The rationale underpinning the treatment is that patients' psychological symptoms are caused by the everyday problems that they are experiencing. Hence, if the patients' problems can be resolved, their symptoms will improve. Problem-solving treatment teaches the patient a specific problem-solving procedure in an attempt to resolve their problems in a structured way.

Problem-solving treatment is delivered over four to six sessions and consists of seven stages: (1) explanation of the treatment and its rationale; (2) clarification and definition of problems (listing the problems in a clear and concrete form and breaking down large problems into smaller and more manageable parts); (3) choice of achievable goals (specific goals are set to be achieved both quickly (before the next treatment sessions) and more slowly (over the course of treatment)); (4) generating solutions (consider any relevant solutions to achieve the goals set (brainstorming)); (5) choice of preferred solution; (6) implementation of preferred solution (any steps required to implement the preferred solution should be listed clearly and precisely, the therapist and patient should agree homework tasks for the patient to carry out before the next session); and (7) evaluation (the patient and therapist evaluate the patient's success or lack of success in the assigned homework tasks).

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Problem-solving treatment has been established as an effective treatment for depressive disorders in primary care. The treatment has been shown to be as effective as both a tricyclic antidepressant (Mynors-Wallis *et al*. 1995) and a selective serotonin reuptake inhibitor (Mynors-Wallis *et al*. 2000). Problem-solving treatment has been shown to be effective when given by trained psychiatrists, trained general practitioners and trained community nurses (Mynors-Wallis *et al*. 1997). Problem-solving treatment has also been shown to be effective in a multicentre European study when given to depressed individuals, recruited from community samples (Dowrick *et al*. 2000). It has not been possible to predict which patients might preferentially benefit from problem-solving intervention compared with medication (Mynors-Wallis & Gath, 1997).

This paper reports data from a study of 151 patients with major depression recruited from primary care in Oxfordshire, UK. A randomized, controlled trial was conducted to determine the relative efficacy of four treatments: (*i*) problem-solving treatment given by a trained general practitioner; (*ii*) problem-solving treatment given by a trained community nurse; (*iii*) antidepressant medication (usually paroxetine); or, (*iv*) the combination of antidepressant medication and problem-solving treatment.

The main conclusions from this study were that there was no difference in efficacy between the four treatments, either at the end of treatment (12 weeks) or at 1 year follow-up. In particular, there was no difference whether the problem-solving treatment was given by a trained nurse or a trained family doctor. The combination of problem-solving treatment and medication was not shown to be more beneficial than either treatment alone (Mynors-Wallis *et al*. 2000).

Although the main focus of the study was to evaluate the efficacy of the four treatments, a second research aim was to evaluate the mechanism by which problem-solving treatment works. Data were gathered in the study to investigate the mechanism of action of the problem-solving treatment. Two hypotheses were tested: (1) in that problem-solving treatment focuses on problem resolution, the problem-solving treatment would result in better problem resolution than medication; and (2) in that problem-solving treatment is an active collaborative treatment, which emphasizes the role of the patient in getting themselves better, problem-solving treatment would increase the patients' sense of mastery and self-control more than medication.

An understanding of the mechanism of treatment action would be useful in helping to decide which aspects of the treatment are important and perhaps then enabling a modification of the treatment. Understanding the mechanism of treatment might also assist in predicting which patients might most benefit from treatment.

METHOD

A full description of the study design and methodology is reported elsewhere (Mynors-Wallis *et al*. 2000). In brief, patients referred by their general practitioners and confirmed as suffering from major depression were randomly allocated to receive one of the four treatments. The treatments were given in six sessions over 12 weeks by either a research general practitioner, a research community nurse or by both for the combination treatment.

All patients recruited into the study were assessed by a research interviewer (blind to treatment received) at baseline and at weeks six and twelve. In addition to ratings of clinical symptoms, patients were asked to rate the severity of their problems. Patients identified up to three individual problems which were rated using the Personal Questionnaire Rapid Scaling Technique (PQRST). The patient was asked to specify a problem e.g. 'My husband does not help enough with the children'. The interviewer then recorded the patient's responses to a series of paired adjectives asking how much of a problem is ……? This process results in a rating of problem severity on a ten point scale. In this way a standardized scoring system is used for individualized patient problems (Mulhall, 1976). The patients' perception of the severity of their problems were rated at baseline and at weeks six and twelve.

Self-control and sense of mastery were rated by patients on two nine-point, anchored Likert scales, at baseline and weeks six and twelve. The two scales were: (1) I feel I have my life under control; and (2) I feel overwhelmed by events.

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Analysis

The data were analysed using SPSS version 10. The patients' perceptions of problem severity, self-control and mastery were analysed by treatment group and time. The Pearson correlation coefficient was used to explore the link between severity of depression (as rated on the Beck Depression Inventory (Beck *et al.* 1962), the severity of problems and the mastery and self-control variables.

RESULTS

Problem resolution

Figs 1 and 2 show the patients' mean rating of the severity of their two main identified problems on the PQRST at baseline, week 6 and week 12. Results are shown according to treatment group.

There was a significant difference in problem resolution for the main problem identified only. Analysis of variance at 6 weeks ($P = 0{\cdot}008$) and at 12 weeks ($P = 0{\cdot}005$) showed a significant difference between the four groups, with patients who received medication alone having the greater perception of problem resolution.

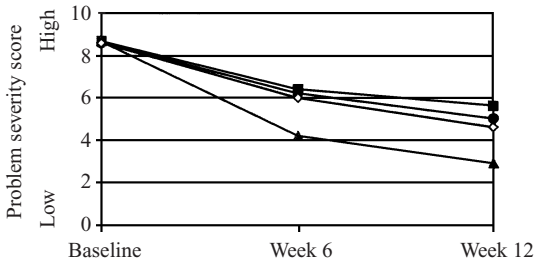


FIG. 1. Main problem identified: severity at baseline, week 6 and week 12. (●, PST GP; ■, PST nurse; ▲, medication; ◇, combination.)

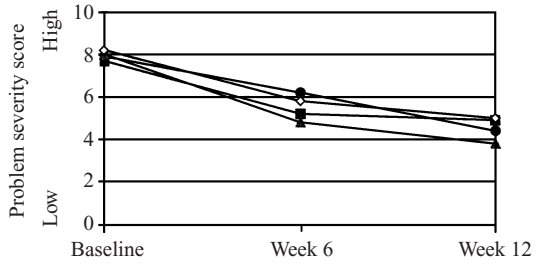


FIG. 2. Second problem identified: severity at baseline, week 6 and week 12. (●, PST GP; ■, PST nurse; ▲, medication; ◇, combination.)

Table 1. *Results from self-control and mastery*

	Baseline ($N = 151$)	Week 6 ($N = 139$)	Week 12 ($N = 135$)
(a) Number of patients who agree or strongly agree with the statement 'I feel I have my life under control'			
PST GP ($N = 39$)	2	3	13
PST Nurse ($N = 41$)	3	9	10
Medication ($N = 36$)	3	8	10
Combination ($N = 35$)	1	8	10
(b) Number of patients who disagree or strongly disagree with the statement 'I feel overwhelmed by events'			
PST GP ($N = 39$)	1	2	13
PST Nurse ($N = 41$)	4	5	8
Medication ($N = 36$)	2	9	11
Combination ($N = 35$)	5	9	13

Pearson χ^2 analysis showed no significant difference between the four groups in terms of agreement with the statement 'I feel I have my life under control' at baseline or 6 and 12 weeks.

The results from the self-control and mastery scales are given in Table 1. Table 1 reports first the number of patients who agreed or strongly agreed that their life was under control at each assessment point. Secondly, Table 1 shows the number of patients who disagreed or strongly disagreed that they felt overwhelmed by events at each assessment point. The scores on the Likert scale were chosen as being clear cut-offs for agreement or disagreement.

Pearson chi-square analysis showed a significant difference between the four groups in terms of disagreement with the statement 'I feel overwhelmed by events' ($P = 0{\cdot}047$) at 6 weeks. Patients receiving problem-solving treatment alone were more likely to be feeling overwhelmed by events at 6 weeks.

There was a positive correlation between severity of problems rated on the PQRST and the severity of symptoms rated on the Beck Depression Inventory. For the first problem identified at both week 6 ($r = 0{\cdot}45$, $P < 0{\cdot}001$) and at week 12 ($r = 0{\cdot}42$, $P < 0{\cdot}001$). Also for the second problem identified at both week 6 ($r = 0{\cdot}38$, $P < 0{\cdot}001$) and at week 12 ($r = 0{\cdot}54$, $P < 0{\cdot}001$). Similarly, there was a positive correlation between the statement 'I feel overwhelmed by events' and the severity of depression rated on the Beck Depression Inventory – at week 6 ($r = 0{\cdot}47$, $P < 0{\cdot}001$) and at

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week 12 ($r = 0{\cdot}58$, $P < 0{\cdot}001$). There was a negative correlation between the statement 'I feel I have my life under control' and depression severity – at week 6 ($r = -0{\cdot}70$, $P < 0{\cdot}001$) and at week 12 ($r = -0{\cdot}69$, $P < 0{\cdot}001$).

DISCUSSION

The results presented in this paper do not immediately support either of the hypotheses proposed. Compared with medication, problem-solving treatment did not result in a quicker or greater resolution of the patient's perception of the severity of their problems. Neither did problem-solving treatment result in a quicker or greater sense of mastery and self-control as rated by patients.

One of two conclusions can be drawn from these findings: either both hypotheses were false or there is a type two error. In order to decide between these two conclusions, the power of the study to answer the hypotheses must be considered. The study was powered to detect differences in treatment efficacy not to determine treatment mechanism. However, significant differences were found for the main problem identified in favour of medication producing a swifter change in the perception of problem severity at both 6 and 12 weeks. Similarly, patients on medication had a greater sense of mastery at 6 weeks. Thus, although two randomized controlled trials have now shown medication and problem-solving treatment to be equally effective in the treatment of major depression in primary care, the findings reported in this paper do not suggest that the mechanism by which problem-solving treatment works is by improving the patient's perception of their problem severity, or by improving their sense of mastery and self-control.

A valid criticism of this paper is that the study did not include an objective measure of problem severity. An outside view of the severity of the problem might have resulted in a different result. Also, in retrospect it might have been helpful to attempt to categorize the problems pre-treatment, first into those likely to be soluble (in which case problem-solving might well have had a more clear mediating role). Secondly, problems could be categorized as likely to be insoluble (in which case problem-solving might have simply added to a sense of hopelessness – with the learning of coping skills likely to be more important). Thirdly, problems could be categorized as not problems at all but better understood as due to the patients' negative cognitions – for these patients medication might well be most appropriate. This would be a fruitful area for further research.

Another point to consider is that: perception of problem severity, self-control and mastery may simply be proxy measures of depressed mood. A strong correlation was found between the measures and the severity of symptoms on the Beck Depression Inventory. In this study as patients' mood improved, so their concern about problems decreased. Similarly, as patients' mood improved, their sense of self-control and mastery increased. This is a similar finding to that of Simons *et al.* 1984 who looked for differential effects of cognitive therapy *versus* nortriptyline pharmacotherapy on cognitive measures. They found that cognitive change occurred as much in pharmacotherapy as in cognitive therapy and concluded that cognitive measures behaved more as symptoms of depression rather than as causes. DeRubeis *et al.* (1990) considered this issue in relation to another study of cognitive therapy and pharmacotherapy and noted that depressive symptoms and the mechanisms of effective treatments are 'intertwined or reciprocally caused'. Similarly, Fava *et al.* (1994) found dysfunctional attitudes (a cognitive measure) to be positively associated with depression severity scores. They concluded that dysfunctional attitudes are a state dependent symptom. It is probably the case that the measures chosen to determine the mechanism of problem-solving are similarly state dependent symptoms rather than independent mediating variables.

This study has shown patient ratings of problem severity and of their sense of mastery and self-control to be clearly associated with the severity of their depressive disorder. These findings from problem-solving treatment are in line with findings from cognitive therapy that the suggested mediators of the mechanism of action of the therapy cannot be proven. This may be because the proposed mediators are simply wrong or it may be that the proposed mediators are too closely linked with depressive severity to act as independent variables.

A final consideration is that if the measures chosen are not mediators for the mechanism of

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problem-solving treatment what other mechanisms could be considered. One mechanism may simply be that of activity. Problem-solving treatment has a strong behavioural component with an emphasis on getting the patient doing activities. A previous study (Mynors-Wallis *et al*. 1997) found that there was no difference in symptom scores between patients with emotional disorders who had received problem-solving and those who had received treatment as usual. However, there was a marked reduction in disability days and day off sick for the problem-solving group. This may reflect the encouragement provided by the problem-solving therapist to resume usual activities. It may be that increased activity is the therapeutic mechanism – this could be another area for research.

Unfortunately, this study has not allowed a straightforward answer to be provided as to the question posed in the paper's title: Does problem-solving treatment work through resolving problems? We do now know that problem-solving does not work through improving the patient's perception of the severity of their problem, neither does problem-solving work by increasing the patient's sense of mastery or self-control. The mediating mechanism, however, remains unanswered for the treatment effect of problem-solving.

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