

## Changing perceived control in patients with physical disabilities: An intervention study with patients receiving rehabilitation

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Physiotherapy patients' perceptions of personal control over recovery (during rehabilitation) have been shown to be predictive of their progress. An experimental letter, consisting of the routine appointment letter plus some paragraphs designed to increase perceived control, was sent to 39 randomly selected patients prior to their first appointment. The remaining 32 control patients received the routine letter only. Approximately one week after each patient's first appointment, all patients were interviewed. The group to whom the experimental letter had been sent were found, on average, to have significantly higher levels of perceived control and tended to be more satisfied with information than the control group. There were no significant differences between groups on accuracy of expectations of physiotherapy. It is suggested that this type of communication given prior to treatment might lead to patients making better and faster progress with recovery. However, this possibility needs to be investigated by further study.

Partridge & Johnston (1989) found that patients with a higher level of perceived control over recovery made more progress with recovery from disability. Hence it might be beneficial if perceptions of internal control could be increased by a psychological intervention. If this could be achieved, then the effects of increasing perceived control on subsequent recovery might be investigated in a further study.

Perceived control is defined by Wallston, Wallston, Smith & Dobbins (1987) as 'the belief that one can determine one's own internal states and behaviour, influence

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one's environment and/or bring about desired outcomes'. Locus of Control (LOC) is a related construct derived from Rotter's (1954) social learning theory. It refers to the extent to which an individual believes that events are determined by internal factors (i.e. under his/her own control) or external factors (i.e. affected by chance, luck, fate or by the behaviour of powerful others).

Perceived control has been found to be associated with beneficial outcomes for spinal injury patients (Shadish, Hickman & Arvick, 1981), for patients undergoing cardiac surgery (Anderson, 1987) and for severe accident victims (Bulman & Wortman, 1977). It is not known why perceived control is associated with better outcomes nor whether an increase would result in better progress with recovery from various illnesses. Perceived control may influence health behaviour; e.g. Burhans (1973) found that subjects in a weight-reduction programme with internal LOC performed more of the recommended behaviours than did externals. Those with high perceived control may engage in more health information seeking; e.g. Seeman & Evans (1962) found that tuberculosis patients who had an internal LOC knew more about their condition and were more inquisitive with doctors and nurses about tuberculosis and their own situation than patients with an external LOC. They were also less satisfied with the amount of information they were getting from hospital personnel, suggesting that increasing internality in patients might make them less satisfied with the amount of information they receive. However, many interventions (such as preparatory letters), provide patients with more information which might increase their satisfaction. Hence patients' satisfaction with an intervention needs to be investigated.

Partridge & Johnston (1989) found that in physiotherapy patients internal LOC concerning recovery predicted recovery from disability. A situation-specific scale, the Recovery Locus of Control Scale (RLOC), assessing patients' perceived personal control over their recovery from physical disability was used. While this study showed that RLOC predicted recovery, it does not indicate whether increasing perceived control can result in greater recovery. Kaplan, Atkins & Reinsch (1984) found that various behavioural interventions increased the belief in control and adherence to exercise programmes for patients with chronic obstructive pulmonary disease. It is possible that a simple intervention could be successful in increasing patients' sense of control over their recovery, and thereby the recovery achieved.

The present study examines the first stage in this process, investigating whether perceived control over recovery during rehabilitation can be increased by a preparatory letter before the start of treatment.

## Method

### *Design*

Out-patients attending for physiotherapy were randomly allocated to one of two groups: control patients were sent a standard letter confirming their appointment; experimental patients received the standard letter, plus additional paragraphs specially designed for this project. The effects of the experimental letter were assessed one week after the patients' first appointment, using a self-report questionnaire on measures of RLOC, satisfaction and accuracy of expectations about physiotherapy.

### Subjects

All out-patients attending for physiotherapy treatment at the Royal Free Hospital for the first time for a particular complaint who were fluent English speakers and aged over 16 were included. Patients whose appointment was urgent (within three days) were excluded because the letter would not have reached them in time. Patients whose second appointment occurred more than 14 days after their first appointment were also excluded. Out-patients were selected because they would have less chance of being influenced by doctors or nurses and would have a greater degree of control over their daily activities. They were all first-time attenders so that an introductory letter could be sent to them which might influence their perceived control right from the start of treatment, before they could be influenced by the physiotherapists or by any advice or instructions they were receiving. There were finally 71 subjects, 27 male and 44 female (mean age 47.6 years, SD = 16.3). Their diagnoses from physiotherapy notes were: osteoarthritis (seven), pain (22), fracture (11) and other varied diagnoses (25). In addition to the exclusions noted above, a further 61 patients were not included, mainly because they were discharged prior to interview (29), cancelled (seven) or did not attend for their appointment (18).

### Materials

*Letters.* The standard letter confirming a physiotherapy appointment was sent to all patients in the study. The experimental group's letter contained additional paragraphs headed: 'Information sheet for patients receiving physiotherapy'. (see Appendix) These paragraphs were developed in consultation with the Head of the Physiotherapy Department (J. C.) so that she could sanction their use; she was not involved in the treatment of any of the patients.

The 'Flesch Formula for Reading Ease' (Flesch, 1948) was applied to the letter which was found to be comprehensible to about 75 per cent of the general population.

*Patient questionnaire.* The questionnaire included: (1) background data: the patient's name and sex, time since first appointment and the number of appointments attended; (2) the RLOC: this scale has been shown (Partridge & Johnston, 1989) to be internally consistent and to have construct and predictive validity for patients in physiotherapy; (3) accuracy of expectations: patients rated the statement: 'my expectations of physiotherapy were accurate' on a five-point Likert type scale of agreement; and (4) satisfaction with information rated on a five-point Likert type scale.

### Procedure

The project was carried out over three months. Prior to the first appointment, each patient was randomly allocated to the experimental ( $N = 39$ ) or control ( $N = 32$ ) group. The appropriate letters were sent to the patients' homes, rather than handing them out at the first appointment, to ensure that the patients would have time to read the letter and think about it before coming to physiotherapy, and so that patients would not see each others' letters and thereby discover that some were receiving the experimental letter and others were not. No check was made on patients' reading of the letter or of previous experience of physiotherapy.

The physiotherapists treating these patients knew there was a study being carried out, but did not know what it was about and had not seen the experimental letter. Hence both they and the subjects were 'blind' to the aims of the project. Approximately one week after their first appointment, when patients returned to physiotherapy for a subsequent appointment, an independent assessor asked them to complete the patient questionnaire while waiting for their appointment.

### Results

There were 20 women and 12 men in the control group, and 24 women and 15 men in the experimental group. The groups were well matched on age, days since first appointment, number of appointments attended, diagnoses, and the numbers of

patients in each group treated by each physiotherapist. Statistical tests ( $t$  test or  $\chi^2$  as appropriate) revealed no significant differences on these variables. The diagnoses for the two groups appeared to be fairly well matched.

The experimental group had a significantly higher mean internality score (experimental group: mean = 35.20, SD = 4.7; control group: mean = 31.75, SD = 5.6;  $t = 2.83$ ,  $p = .006$ ). The nature of the change in perceived control was further explored by examining the distribution of scores in the two groups. The experimental group showed both increased representation among the highest 20 per cent of the distribution (28 compared with 9 per cent of the control group) and reduced representation among the lowest 20 per cent (13 compared with 34 per cent of the control group).

The control and experimental groups did not differ in accuracy of expectations ( $\chi^2 = 1.70$ ,  $p > .10$ ). Satisfaction with the information received prior to patients' first appointments tended to be higher in the experimental group ( $\chi^2 = 5.54$ ,  $p = .06$ ).

### Discussion

The results show that it is possible to alter patients' perceptions of control by the addition of a few paragraphs to the routine letter confirming a patient's appointment. This is a potentially powerful outcome for a minimal input.

This increase in perceived control might in turn result in improved progress with recovery, since Partridge & Johnston (1989) found that patients with more internal RLOC tended to make better progress in recovery. The effect of the experimental letter on rehabilitation outcome remains to be investigated. Distributions of scores were checked and showed that patients at all levels of control were affected by the letter. A bias to have less effect on those with low perceived control or an excess effect on those with high perceived control might have been less beneficial or even detrimental.

It was predicted that the letter might increase accuracy of patients' expectations, but this was not observed. This was probably because many patients (15 control patients and 13 experimental patients) did not feel that they had experienced enough physiotherapy to say how accurate their expectations were. Possible adverse effects were also examined. The experimental letter did not result in reduced patient satisfaction with information. Indeed, the experimental group patients tended to be more satisfied with their information about physiotherapy. Also, they did not assume such great responsibility for their recovery that they failed to attend; attendance rates in both groups were similar.

The complex relationships between different theoretical conceptualizations of perceived control have been elaborated by Wallston *et al.* (1987) with respect to locus of control, attributions and self-efficacy beliefs, and Corcoran (1991) on locus of control and self-efficacy approaches. The RLOC assesses beliefs in control over outcome, a concept similar to outcome self-efficacy. It would be inappropriate to attempt to increase behavioural self-efficacy (the belief that one can execute the required behaviours) prior to the initial physiotherapy appointment where the relevant behaviours are described to patients. However, it is possible that the experimental letter did influence patients' subsequent beliefs that the tasks were within their capacity. Such behavioural self-efficacy beliefs have been found to

predict performance of the behaviours (Bandura, 1989) and in a rehabilitation setting might contribute to reducing disability. The RLOC does not assess belief in the control of powerful others as do other LOC scales. This could be important in a health care setting where care is managed by powerful others, in this case physiotherapists.

The present data do not indicate the persistence of the effects on perceived control. Schulz & Hanusa (1980) found their change in LOC was only very temporary, whereas Langer & Rodin (1976) found it was longer lasting. In rehabilitation, it is desirable that the change persists at least for some time after discharge, especially for patients whose recovery takes several months. Further studies are required to examine whether increasing perceived control (*a*) persists, (*b*) results in greater engagement in rehabilitation behaviours and (*c*) contributes to reduced levels of disability.

### References

- Anderson, E. A. (1987). Pre-operative preparation for cardiac surgery facilitates recovery, reduces psychological distress, and reduces the incidence of acute post-operative hypertension. *Journal of Consulting and Clinical Psychology*, *55*, 4, 513-520.
- Bandura, A. (1989). Human agency in social cognitive theory. *American Psychologist*, *44*, 1175-1184.
- Bulman, R. J. & Wortman, L. B. (1977). Attribution of blame and coping in the 'real world': Severe accident victims react to their lot. *Journal of Personality and Social Psychology*, *35*, 351-363.
- Burhans, P. (1973). Methodological strategies in a field experiment: The effect of message type and locus of control on the subsequent behaviour of participants in a behaviour-modification weight-controlled program. *Dissertation Abstracts International*, *34*, 4456A-4457A.
- Corcoran, K. J. (1991). Efficacy, 'skills', reinforcement, and choice behaviour. *American Psychologist*, *46*, 155-157.
- Flesch, R. (1948). A new readability yardstick. *Journal of Applied Psychology*, *32*, 221-233.
- Kaplan, R. M., Atkins, C. J. & Reinsch, S. (1984). Specific efficacy expectations mediate exercise compliance in patients with C.O.P.D. *Health Psychology*, *3*, 223-242.
- Langer, B. J. & Rodin, J. (1976). Effects of choice and enhanced personal responsibility for the aged: A field experiment in an institutional setting. *Journal of Personality and Social Psychology*, *11*, 155-165.
- Partridge, C. J. & Johnston, M. (1989). Perceived control and recovery from stroke. *British Journal of Clinical Psychology*, *28*, 53-60.
- Rotter, J. B. (1954). *Social Learning and Clinical Psychology*. Englewood Cliffs, NJ: Prentice Hall.
- Schulz, R. & Hanusa, B. H. (1980). Experimental social gerontology: A social psychological perspective. *Journal of Social Issues*, *36*, 30-46.
- Seeman, M. & Evans, J. W. (1962). Alienation and learning in a hospital setting. *American Sociological Review*, *27*, 772-783.
- Shadish, W. R. Jr, Hickman, D. & Arvick, M. C. (1981). Psychological problems of spinal cord injury patients: Emotional distress as a function of time and locus of control. *Journal of Consulting and Clinical Psychology*, *49*, 297.
- Wallston, K. A., Wallston, B. S., Smith, S. & Dobbins, C. J. (1987). Perceived control and health. *Current Psychological Research and Reviews*, *6*, 5-25.

Received 23 March 1990; revised version received 19 July 1991

### Appendix

#### *Information sheet for patients attending physiotherapy*

This is to let you know that you are now being offered physiotherapy at the Royal Free Hospital to help you overcome your particular health problem. By concentrating on your difficulties, you will be shown how you can control your symptoms and problems as quickly and as effectively as possible.

You may be offered advice and instruction about your symptoms and problems and given a home programme. It will be up to you to follow these if you want to recover quickly.

Experience has shown that the more effort you can put in, the more quickly results will be achieved. The therapists are there to help you to resolve your problems.

You may find it helpful to enlist friends and relatives to help you to follow any home programme you are given. May we wish you a speedy recovery.