PAPERS AND ORIGINALS

Psychological rehabilitation after myocardial infarction

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Summary and conclusions

The value of psychological counselling in rehabilitating patients after myocardial infarction was assessed. A total of 143 men who had recently had a myocardial infarction were randomly allocated to either a group receiving intensive rehabilitation or a control group, their outcome being examined after six months. Patients with neurotic, introverted personalities had a poor outcome in the control group but a satisfactory outcome when rehabilitated. Neurotic personalities responded to help, and rehabilitative measures did not increase neurosis. In addition all patients with a negative attitude towards their illness and future had a poor outcome but those with a positive attitude did well. Selection by simple methods of patients who would benefit from psychological rehabilitation seems desirable.

Psychological rehabilitation may be satisfactorily carried out by a specifically trained nurse counsellor attached to a hospital where she works closely with the physician but with close liaison with the general practitioner for follow-up in the community.

Introduction

The rising incidence of myocardial infarction and its increasing prevalence among younger people are such that it has become one of the largest problems in medicine in the UK. While much attention has been paid to acute coronary care, preventive measures, investigation, and treatment, the problems of psychological rehabilitation have not achieved prominence. The devastating effect of myocardial infarction on the patient and his family and the need for help in the physical and psychological readjustments that are required have long been recognised.

The World Health Organisation,¹ the International Society of Cardiology,² and the Royal College of Physicians of London³ have made recommendations on this subject and have stressed the importance of the psychological aspects. No clear guidelines exist, however, on how best to recognise and deal with problems in psychological readjustment or how to define those areas in which help is most valuable.⁴ We undertook the present study in an attempt to clarify the methods of psychological rehabilitation and evaluate the results.

Patients and methods

All men under the age of 60 who were admitted to the coronary care unit of this hospital over a two-year period with the diagnosis of acute myocardial infarction (WHO criteria)⁵ and who survived the acute stage were registered. Patients, grouped according to age, were randomly allocated to an intensive rehabilitation or a control group using WHO permutation tables.⁵ At the end of the hospital stay 153 men had survived (76 intensively rehabilitated, 77 controls). At six months numbers were reduced to 143 (68 intensively rehabilitated, 75 controls); these comprised 90 manual and 53 non-manual workers, with an age range of 28-59 (mean 51) years.

Patients in the rehabilitation group were first approached by the rehabilitation team, comprising a doctor and a nurse counsellor,⁶ on the third day after infarction⁷ and were interviewed in hospital and at home during the six months of the trial. The patients' wives were seen on several occasions, sometimes alone and sometimes with the patient.⁸⁻⁹ Repeated assessments were made of the physical and psychological states, and psychological counselling was given when necessary to encourage maximum independence at each phase.¹⁰ Advice with regard to secondary preventive measures was reinforced verbally and in writing on each occasion.¹¹ The patient and his wife were educated to understand the nature of his illness and were encouraged to express any fears and difficulties. The physical assessment was supplemented by a submaximal effort test⁵ at six weeks, 12 weeks, and six months after myocardial infarction.

Patients allocated to the control group received the instructions usually given after myocardial infarction—namely, advice regarding work, smoking, diet, and physical activities. They received a booklet of general information. At six weeks a physical assessment was made and advice given regarding return to work. They were not seen by the rehabilitation team until six months after hospital discharge, when they were interviewed with their wives.

All patients initially completed a questionnaire about their previous work record and an Eysenck Personality Inventory (EPI) form A.¹² The patient's attitude to his illness and his future was recorded as positive or negative. A positive attitude was defined as an acceptance

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by the patient of the myocardial infarction and, while showing the normal anxiety and concern for the future,¹³ an ability to plan for the necessary readjustments and an eagerness to seek help to achieve these. A negative attitude implied either a failure by the patient to accept the fact of his myocardial infarction, with prolonged denial, or an inability, having accepted the fact, to plan for the future or to seek and accept advice due to excessive anxiety or depression.

To measure outcome we defined several goals—namely, return to work (stable employment avoiding strenuous competitive effort and excessive hours); physical and emotional stability (minimal medical care needed or minimal demands made); and social independence (coping adequately with family, work, and other stresses). The achievement of these goals was measured at six months after infarction by scoring zero for poor outcome, one for average, and two for good outcome; these scores were totalled to give each patient a psychological rehabilitation score. The maximum score was six, but four or more was considered to be good. The appendix gives the other details of scoring.

All patients completed a further questionnaire (EPI, form B)¹² at six months to determine any personality change.

For statistical analysis we used *t* tests to compare direct outcomes, one-way analysis of variance for the scores of the psychological tests and for examining outcome scores, and χ^2 tests when appropriate.

Results

Table I shows the mean scores for each goal for the rehabilitated and control groups together with the total psychological rehabilitation scores for those who were physically fit to return to work. Rehabilitation produced significantly higher scores for achieving social independence. The other goals showed no significant difference

TABLE I—Mean ($\pm$ SD) scores for rehabilitation achievements in patients physically fit to return to work

	Rehabilitation group (n = 59)	Control group (n = 66)	Significance
Return to work	1.59 $\pm$ 0.70	1.61 $\pm$ 0.72	NS
Physical and emotional stability	1.07 $\pm$ 0.76	0.97 $\pm$ 0.78	NS
Social independence	1.03 $\pm$ 0.69	0.80 $\pm$ 0.66	P < 0.05
Psychological rehabilitation	3.69 $\pm$ 1.67	3.38 $\pm$ 1.64	NS

NS = Not significant.

between rehabilitated patients and controls. There was a significantly earlier return to work in the group receiving rehabilitation (14.1 $\pm$ SD 6.5 weeks) compared with the controls (16.5 $\pm$ 6.0 weeks; P < 0.05). Return to suitable work in terms of hours and physical and mental stress was achieved by the same proportion of patients in each group (88%). Of the remainder, those in the control group had more severe problems.¹⁴

Table II shows that initial neuroticism and extraversion scores for the patients were not significantly different from those in a normal population. A similar result was found on examination at six months. According to their initial EPI scores the patients were divided into two groups—namely, those with scores above the mean, indicating an increasingly neurotic personality, and those with scores below the mean, indicating an increasingly stable personality. Table III shows that among patients with a high neuroticism score a greater proportion of the rehabilitated group had a good outcome compared with the controls. By contrast, the controls had a poor outcome in terms of both physical and emotional stability (P < 0.01) and social

TABLE III—Comparison of neuroticism and six-month outcome scores in patients fit for work in both groups

Group	Outcome		Significance
	Good*	Poor†	
<i>High neuroticism score (n = 59)</i>			
Rehabilitation	19	11	} $\chi^2 = 3.82$; P = 0.05; DF = 1
Control	11	18	
<i>Low neuroticism score (n = 62)</i>			
Rehabilitation	16	13	} $\chi^2 = 0.46$; NS; DF = 1
Control	21	12	

NS = Not significant. DF = Degrees of freedom.

*Psychological rehabilitation scores 4–6.

†Psychological rehabilitation scores 0–3.

independence (P < 0.05). For the patients with low neuroticism scores, however, outcome did not differ between the two types of management.

Table IV, which combines the neuroticism scores with those for introversion or extraversion, shows that the control group of neurotic introverts had a poor outcome while the rehabilitated group had a significantly better outcome. All patients were divided into those with positive or negative attitudes, and table V shows that those with a continuing positive attitude fared significantly better than those with a continuing negative attitude. Although neuroticism scores did not change significantly in the six months changes in attitude occurred particularly in the early weeks. Table VI shows that

TABLE IV—Comparison of outcome (psychological rehabilitation) scores in the 30 neurotic introverts fit to work in the rehabilitation and control groups

Group	Mean ($\pm$ SD) outcome score	Significance
Rehabilitation (n = 15)	4.20 $\pm$ 1.15	} P < 0.05
Control (n = 15)	2.93 $\pm$ 1.53	

TABLE V—Relation of outcome to sustained positive or negative attitude—that is, positive or negative attitude initially and after six weeks and six months—in 34 rehabilitated patients fit to work

Attitude	Outcome		Significance
	Good	Poor	
Positive	23	5	} P < 0.005 (Fisher's test)
Negative	1	5	

TABLE VI—Outcome related to patients' attitudes at six weeks and six months after myocardial infarction

Attitude	Outcome		Significance
	Good	Poor	
<i>At six weeks (n = 59)*</i>			
Positive	26	13	} $\chi^2 = 3.86$; $P < 0.05$; $DF = 1$
Negative	8	12	
<i>At six months (n = 125)†</i>			
Positive	61	25	} $\chi^2 = 13.72$; $P < 0.0005$; $DF = 1$
Negative	14	25	

*Rehabilitated patients only.

†Rehabilitated and control patients.

TABLE II—Mean ($\pm$ SD) initial scores for neuroticism and extraversion or introversion according to Eysenck Personality Questionnaire, form A, in rehabilitation and control groups and normal population and neurotic group

	Rehabilitation group (n = 67)	Control group (n = 72)	Total (n = 139)	Normal population* (n = 2000)	Mixed neurotic group* (n = 61)
Neuroticism	9.560 $\pm$ 5.520	10.068 $\pm$ 5.520	9.812 $\pm$ 5.507	9.065 $\pm$ 4.783	14.410 $\pm$ 5.475
Extraversion or introversion	11.520 $\pm$ 3.602	11.365 $\pm$ 4.802	11.443 $\pm$ 4.265	12.070 $\pm$ 4.370	9.951 $\pm$ 4.345

*Figures from Eysenck and Eysenck.¹²

patients with a positive attitude at six weeks had a better outcome than those with a negative attitude, and by six months this was even more closely associated with a good outcome. At six weeks 39 out of 59 rehabilitated patients (66%) had a positive attitude; by six months this proportion had risen to 47 (80%) compared with only 39 out of 66 control patients (59%).

Physical factors were examined and related to the patient's achievement of rehabilitation goals. The initial severity of the myocardial infarction, early complications, and continuing physical symptoms, including angina, appeared to have little bearing on the achievement of psychological adjustment.

Discussion

The survivor of myocardial infarction, though apparently in good health, constantly fears recurrence and a premature death. While he may cling initially to the advice regarding secondary prevention it soon becomes apparent to him that these measures are affecting the quality of his life and are by no means proof against further infarction. Conflicts may easily arise and psychological adjustment be difficult to achieve. While not underestimating the importance of secondary preventive measures, establishing a stable psychological state and a positive attitude towards the future is of the first importance.

Success of rehabilitation has in the past often been measured solely by return to work. Although this is by no means synonymous with complete readjustment and stability,¹⁴ the implication is that in returning to being a wage earner and provider for the family and in resuming his previous way of life the patient has achieved psychological rehabilitation. In the future patients will probably experience increasing difficulty in getting employment after myocardial infarction because of the generally reduced availability of jobs and the preference given to fitter men. The radical change in the patient's life brought about by losing his job will magnify the problems of readjustment.

While every patient would doubtless appreciate discussions of his problems, counselling, and help,^{15,16} the physician or general practitioner has insufficient time to do this except superficially. An alternative is to establish specific rehabilitation services. Before recommending this it is important to know the precise value of the psychological aspects of rehabilitation,^{4,17} bearing in mind that they may vary in different countries and social environments. It is equally important to know whether these services may do any harm by increasing neuroticism. In this study we found that neurotic introverts achieved a much better outcome as a result of psychological rehabilitation, while in no case was there evidence that rehabilitation produced neurosis. We gained the impression, however, that for stable extraverts psychological rehabilitative measures could disturb defences that had already been created for coping with life. Clearly patients should be selected for psychological rehabilitation. The EPI was simple to use, and neuroticism scores above the mean appeared to select satisfactorily those who would benefit. Of equal importance was the assessment of attitude at six weeks after infarction, which was determined by an interview with the patient and his wife. In determining the patient's attitude and his reaction to his illness it is the wife who will most readily detect changes in mood, and the importance of interviewing her was confirmed in this study.^{8,9}

Experience from the study indicated that psychologically assessing and rehabilitating patients in a district and its general hospital requires a full-time employee. We think that a nurse counsellor is ideal for this purpose. Special training for such a nurse counsellor would be required, giving her a thorough knowledge of the physical aspects of myocardial infarction, rehabilitation principles, and counselling techniques. We have found the work to be appropriate for a nurse because of her familiarity with clinical procedures in hospital and her traditional role in the doctor and nurse relationship. By following up the patient from the coronary care unit to the medical wards she provides continuity; her liaison with staff and later with the general practitioner is evident to the patient. She can spend

more time with the patient than the intensive care or ward medical or nursing staff and so is in a good position to achieve early rapport.⁷ Furthermore, the close rapport with the wife and family, gained by visits to the home, gives her first-hand knowledge of domestic circumstances. A nurse counsellor achieves a less authoritarian relationship than either the practitioner or hospital; this enables patients and family to contact her more readily for help with the initial stages of minor physical or emotional problems, when they are more easily solved.

During the early days of convalescence the patient and his family need to be educated in secondary preventive measures and helped in making suitable patterns for the future. The advice given by the nurse counsellor is likely to be more practical than that of a doctor. Throughout this time regular meetings with the physician support her work. At six weeks after infarction the nurse counsellor has a detailed knowledge of the patient's reaction to his illness and his attitude towards the future, which will be invaluable to the cardiologist when making his six-week assessment. For those in need of further support the nurse counsellor liaises with the general practitioner. The varied aspects of this work are best performed by a single person rather than by a team or individual psychiatrist, psychiatric social worker, or social worker, who may tend to operate independently. The nurse counsellor can help to unify the policy and advice given to the patient by physician and general practitioner, which is clearly important.¹⁸

Our study showed that rehabilitation services were not only accepted but were in demand from patients of all social classes. The patients' verdict was that psychological rehabilitation formed a major aspect of the coronary aftercare. Those participating in the study became increasingly convinced that an extension of the provision of these services is essential in the UK and that a nurse counsellor is the best person to establish them.

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Appendix

SCORING FOR ACHIEVEMENT OF PSYCHOLOGICAL REHABILITATION GOALS

Work—Suitable work was defined as being less than 50 hours per week, with no competitive effort and not entailing strenuous isometric exercise. Driving public service or heavy goods vehicles was not permitted. Scoring was as follows: not returned to work by six months, score 0; returned to unsuitable work, 1; and returned to suitable work, 2.

Physical and emotional stability—Physical stability implies that minimal care is needed from doctors and is reached when only routine prescriptions for cardiovascular drugs are required (for example, beta-blockers). Emotional stability implies minimal anxiety or depression and no need for tranquillisers or hypnotics. A positive attitude to the illness and the future is required. Scoring was as follows: very dependent on medical adviser, score 0; moderately dependent, 1; and largely independent, 2.

Social independence—This implies good coping ability with stresses at home, at work, and socially. Scoring was: very dependent on family and colleagues, score 0; moderately dependent, 1; and largely independent, 2.

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Shortening hospital stay for psychiatric care: effect on patients and their families

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Summary and conclusions

A one-year cohort of patients from a defined catchment area with acute functional disorders were allocated at random to brief care (experimental group) or standard care (control group) in hospital to examine the effect of shortening hospital stay on the clinical and social functioning of patients and the distress abnormal functioning caused to others. A total of 127 patients were interviewed on entry to the study, and 106 were followed up. The brief care group had significantly shorter mean and median lengths of stay than the control group, but there was no difference between the groups in the number of days spent in hospital during subsequent admissions. The groups were well matched for clinical and social variables. Rates of improvement over 13 weeks were essentially the same by all measures of outcome, including the Present State Examination and Patient's Behaviour Assessment Scale, which was developed for the study to measure deterioration in behaviour and social functioning and adverse effects and distress on others. There was no difference between the two groups in burden to the community supporting services, social security requirements, or GP attendances. Improvement rates were nearly identical on all measures within and across diagnostic subgroups. Brief care resulted in a 33% reduction in average length of stay compared with the year before but was associated with a corresponding increase in day hospital use. The short-stay policy continued the year after the study finished.

The findings confirm the value of shortening hospital stay and improving day care facilities for most localities.

Introduction

Economic pressures to reduce the number of beds for psychiatric care and shorten hospital stay are experienced worldwide, yet only two studies—both from the USA^{1 2}—have evaluated the effect of rapid discharge on patients' clinical and social functioning or the burden and distress it could cause their families. We have therefore examined this variable in a consecutive series of patients drawn from a catchment area population of 90 000 admitted to a 38-bedded psychiatric unit in a district general hospital during 1975. We report here the overall results.

Patients and methods

Immediately on admission patients were allocated at random to either brief care (short-stay group) or standard care (control group), those from outside the catchment area, aged under 16, or suffering from a diagnosable severe brain or physical disorder being excluded. Allocation was done the moment patients were admitted to avoid any possibility of bias. No restriction was put on standard care: patients were to be kept in hospital for as long as necessary. Patients in the brief care group and their families were told that the patient would probably be discharged in less than eight days. All the clinicians concerned agreed to make every effort to discharge patients within this time unless there were definite contraindications.

Each patient and his or her most affected relative or closest informant were assessed just after admission and again three months later to see if those in the brief care group had improved to the same extent as the controls. In all cases clinical symptoms during the previous four weeks were assessed by the MRC Present State Examination (PSE) five to seven days after admission. The PSE was repeated three months later. The patient's social behaviour and its effect on significant others were evaluated by interviewing the closest relative or informant 12-14 days and three months after admission. For this purpose we developed a semi-structured standardised interview—namely, the Patient's Behaviour Assessment Scale (PBAS) (later simplified and improved^{3 4})—which provides ratings of the patient's behaviour—for example, withdrawal—and social performance—for example, working or engagement in leisure activities—and the adverse effects caused to the informant or others in the household, such as loss of leisure time or decrease in income. Furthermore, for each item of behaviour or social functioning that showed deterioration or absence of performance the interviewer asked whether the informant had experienced any distress or emotional burden; distress, however, was rated only if it was moderate or severe.

*The improved version of the PBAS—namely, the Social Behaviour Assessment Schedule (SBAS)—may be obtained from Professor S R Hirsch.

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