PSYCHO SOCIAL FACTORS INFLUENCING THE RECOVERY AFTER MYOCARDIAL INFARCTION

KARRI RAMA REDDY
S. M. CHANNABASAVANNA

SUMMARY

A group of 41 consecutive patients with proven diagnosis of Myocardial Infarction were studied. The severity of the Myocardial Infarction, the personality, social background, stressful life events preceding the onset of illness and the psychological reaction occurring in the hospital were correlated with the Psychological, Social and Physical recoveries 4 months after the onset of illness. Social and Psychological recoveries did not depend entirely on physical recovery. All the three were independently influenced by different bio-psychosocial factors.

Introduction

Myocardial Infarction, a manifestation of Ischaemic Heart disease, a major health hazard of the developed countries is said to be on increase in some of the developing countries too. From all experience elsewhere, the prediction is that as India becomes more prosperous, this illness may become one of the major issues (Park 1985).

A great number of people survive after Myocardial Infarction today than 20 years ago due to improved medical care. The projections are that the survivorship rates will increase further during the next two decades. The rehabilitation of the victims become a major problem.

The psycho social research pertaining to Myocardial Infarction can be divided into two. The first line of enquiry is about the psychosocial factors contributing to the development of illness and the second line is concerned with the period after the development of the illness.

In the literature on etiology we have wealth of data based on empirical research. Contributions of workers like Friedman and Rosenman (1974), Jenkins (1971) and Groen (1976) led to the understanding of the predisposing coronary prone behaviour.

The role of stress in precipitation of Myocardial Infarction has been well established (Theorell and Rahe 1971). Studies (Coroeilio et al. 1977; Mahendru et al. 1976) were conducted in India relating to the understanding of development of this illness. On the other hand the literature on the aftermath of Myocardial Infarction is relatively sparse. Very few studies have concentrated on the recovery process and rehabilitation (Doehrman 1977).

The total recovery is the achievement of an individual's return to the premorbid state particularly in physical, psychological and social spheres (Croog et al. 1968). The recovery process from Myocardial Infarction can be conceived not only as the recovery of the heart, but the recovery of the individual possessing that heart from the crisis and the restoration of the individual to his place in the society. Clinician has the tendency to consider the patient in terms of organic systems and to focus on the E.K.G. aspect of the patient's problem. The same is true with a social scientist who worries about the return to work. If specialization is the first reason for this tendency, the second reason is the false assumption that the several dimensions of the recovery are correlated and equal.

1. Manasa Hospital, Rajahmundry - 533 103 (A.P.)
2. Professor & Head of the Department of Psychiatry, National Institute of Mental Health & Neuro Sciences, Bangalore - 560 029.
A few studies (Cay et al. 1973, Wilkund et al. 1984) on the recovery process of Myocardial Infarction are noteworthy and comparable to the present study, but are not comprehensive. The present work is an attempt for a systematic study (1) to explore the influence of the psychosocial factors like socioeconomic background, personality, family interaction, number of stressful life events experienced before the onset of Myocardial Infarction and psychological reactions occurring during the early phase of illness (2) to investigate the correlation between Physical, Psychological and Social recoveries.

Material and Methods

The study was conducted at Jayadeva institute of cardiology, Victoria Hospital, Bangalore. All the patients admitted into I.C.C.U. during 2 months period of collection of cases were screened for the study. The diagnosis of Myocardial Infarction, was established by history, physical examination, E.C.G. and supportive laboratory data.

Patients with past history of Myocardial Infarction, those who died within one week after admission and those belonging to distant places (outside Bangalore district limits) were excluded from the study.

45 patients fulfilling these criteria were taken up for the study, out of which, 41 patients could be followed up successfully and the whereabouts of the rest four could not be traced. The data was collected during 2 phases (1) during hospital stay (2) during follow up after 4 months.

The severity of the Myocardial Infarction was quantitatively estimated by two scales (1) Peel’s Coronary Prognostic Index (2) Norris’ Coronary Prognostic Index. The personality was assessed by Cattell’s 16 P.F. test ‘C’ form. The stressful life events preceding the onset of illness were measured by Holmes and Rahe’s Social readjustment rating Scale and Paykel’s life events inventory. The family interaction pattern was assessed by the scale devised by Bhatti (1979). Patient’s Psychological reactions like anxiety and depression were quantitatively measured through Hamilton’s anxiety and depression scales. Denial was measured by Hacket and Cassem’s Denial Scale.

Follow up assessment was made after completion of 4 months after onset. Out of the 41 followed up successfully 4 had died of second heart attack and 37 were surviving during the followup. Patient’s Psychological condition was assessed by mental status examination and physical recovery was assessed using 2 Parameters. (1) The No. of Anginal attacks that occurred during the interval (2) The physical complications that developed during the interval. The social recovery was measured by Katz Adjustment Scale.

Results

Based on the Social recovery, these 37 cases could be divided into 2 groups; Good social recovery group having KAS dysfunction score less than 8 (n = 19) and poor social recovery group having KAS dysfunction score more than 9 (n = 18).

Based on the psychological recovery, 2 groups could be formed; Psychologically normal (n = 22) and Psychologically morbid (n = 15).

Based on the Anginal attacks, 2 groups could be formed; those who had less than 5 anginal attacks during interval (n = 19) and those who had more than 5 anginal attacks (n = 18).

Among 41 patients, 10 developed physical complications like second heart attack with or without death, congestive heart failure, Cerebro vascular accident, and frozen shoulder and the rest 31 formed the group without complications.
These 4 parameters of recovery formed the dependent variables and were correlat­
ed with 39 independent variables (ie.,) the psychological and Physical factors. The Physical, Social and Psychological recover­ies were correlated.

The tests used for assessing statistical significance were – Analysis of variance, Students’s ‘t’ test, Chi-square test, and Fi­sher’s exact probability test. The summary of the results are given in the accom­panying tables.

Good social adjustment was found in young, extroverted with good will power and optimism. Cordial family interactions, and minimal cardiac damage also contributed to their social recovery. Literates, white collared workers, married people also showed good social adjustment. Poor social recoverers experienced more distressful life events prior to the onset of Myocardial Infarction. Poor social recoverers also showed a tendency to evince more emotional reactions during hospital stay.

Psychological morbidity in the form of Anxiety, and Depression occured in aged, immature dependent, pessimistic people with strained family interactions. Those who experienced more stressful life events before the onset of Myocardial Infarction, and who showed more anxiety, depression and less denial during hospital stay deve­loped psychological morbidity.

Complications were found more in old, bereaved or single, obese patients with intense anxiety during hospital stay. The anginal attacks were less frequent in married, young, carefree extroverts and in those with no emotional reactions during hospital stay. The severity of Myocardial Infarctions, and other physiological concomit­ants influence the recovery, but do not to­tally determine it.

Denial of the illness helped the patients in psychological and social adjustment, but gross denial of the severity of the illness was associated with second heart attack. Social and psychological recovery do not entirely depend on physical recovery. All the three are independently influenced by different bio-psycho social factors.

Discussion

It is difficult to compare our results with other studies due to differences in methodo­logy. For instance with regard to social recovery, return to work was the parameter of recovery in others studies (Cay et al. 1973). In our study, not only return to work but fifteen other social functions were as­sessed to determine social recovery. Cay et al. (1973) found that 69% returned to work. Residual physical symptoms like angina, breathlessness and emotional disturbances like anxiety and depression were found to be responsible for the Non returns. Wil­kund et al. (1984) found that psychological factors were stronger determinants of maladjustment than the physical factors. The present study is more comprehensive by testing the influence of 39 bio-psychosocial factors over recovery.

This study has got important implications. The findings of the study can be utilized in the treatment and rehabilitation of Myocar­dial Infarction patients. The vulnerable pa­tients can be detected at an early stage of hos­pitalization and their negative attributes can be corrected. For instance, the emotional reactions, perception of health status can be corrected with small doses of psychotropic drugs and counselling respectively. It is obvi­ous from the observations, that a team ap­proach is essential for obtaining the best re­covery of cardiac patients.

With the results available, a prognostic in­dex which comprises of all bio psychosocial factors with appropriate weightage depend­ing in their significance can be prepared. The scale has to be standardised on large popula­tion and can be made use of in the treatment and rehabilitation programmes.
### Table 1
Summary of the Results

|   | Social Recovery | Psy. Recovery | Anginal Attacks | Complications |
|---|-----------------|--------------|-----------------|---------------|
| 1. | Sex             | N. S.        | N. S.           | N. S.         |
| 2. | Age             | P < 0.01     | P < 0.05        | N. S.         | P < 0.01 |
| 3. | Education       | N. S.        | N. S.           | N. S.         |
| 4. | Occupation      | N. S.        | N. S.           | N. S.         |
| 5. | Income          | N. S.        | N. S.           | N. S.         |
| 6. | Religion        | N. S.        | P < 0.05        | N. S.         | P < 0.05 |
| 7. | Marital Status  | N. S.        | P < 0.05        | N. S.         | P < 0.05 |
| 8. | Weight          | N. S.        | N. S.           | P < 0.05      |
| 9. | Diet            | N. S.        | N. S.           | N. S.         |
| 10.| Smoking         | P < 0.01     | N. S.           | N. S.         | N. S.   |
| 11.| Exercise        | N. S.        | N. S.           | N. S.         | N. S.   |
| 12.| Physical Illness| N. S.        | N. S.           | N. S.         | N. S.   |
| 13.| Family h/o M. I.| N. S.        | N. S.           | N. S.         | N. S.   |
| 14.| Peet's C. P. I. | P < 0.01     | N. S.           | N. S.         | N. S.   |
| 15.| Norris C. P. I. | N. S.        | N. S.           | N. S.         | N. S.   |
| 16.| 16 PF - A       | P < 0.02     | N. S.           | P < 0.05      |
| 17.| 16 PF - B       | N. S.        | N. S.           | N. S.         |
| 18.| 16 PF - C       | N. S.        | P < 0.02        | P < 0.025     |
| 19.| 16 PF - E       | N. S.        | N. S.           | N. S.         | N. S.   |
| 20.| 16 PF - F       | N. S.        | N. S.           | N. S.         |
| 21.| 16 PF - G       | N. S.        | N. S.           | N. S.         |
| 22.| 16 PF - H       | N. S.        | N. S.           | P < 0.05      |
| 23.| 16 PF - I       | N. S.        | P < 0.05        | N. S.         |
| 24.| 16 PF - L       | N. S.        | P < 0.05        | N. S.         | P < 0.02 |
| 25.| 16 PF - M       | N. S.        | N. S.           | N. S.         | N. S.   |
| 26.| 16 PF - N       | N. S.        | N. S.           | N. S.         | N. S.   |
| 27.| 16 PF - O       | N. S.        | N. S.           | N. S.         |
| 28.| 16 PF - Q1      | N. S.        | N. S.           | N. S.         |
| 29.| 16 PF - Q2      | N. S.        | N. S.           | N. S.         |
| 30.| 16 PF - Q3      | P < 0.02     | N. S.           | N. S.         |
| 31.| 16 PF - Q4      | N. S.        | N. S.           | N. S.         |
| 32.| S. R. R. S.     | N. S.        | N. S.           | N. S.         | N. S.   |
| 33.| Life events No. | N. S.        | P < 0.05        | N. S.         | N. S.   |
| 34.| Life events weightage | N. S.        | P < 0.05        | N. S.         |
| 35.| Anxiety         | N. S.        | P < 0.02        | N. S.         | P < 0.05 |
| 36.| Depression      | N. S.        | P < 0.05        | P < 0.05      |
| 37.| Denial          | N. S.        | P < 0.01        | N. S.         |
| 38.| Health Perception| P < 0.001    | P < 0.02        | N. S.         |
| 39.| Family Interaction| P < 0.01     | P < 0.01        | N. S.         |
Table 2
Correlation between various recoveries

| Recoveries                  | Correlation         |
|-----------------------------|---------------------|
| Physical and social         | Rho coefficient = 0.24269 |
| Physical and psychological  | Rho coefficient = 0.1875 |
| Psychological and social    | Rho coefficient = 0.1875 |

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