RETURN TO WORK AFTER MYOCARDIAL INFARCTION IN A LOWER SOCIOECONOMIC POPULATION

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A retrospective study of the work status of 45 consecutive male patients who were at least 12 months post myocardial infarction was carried out. The vast majority of patients were in the lower socioeconomic classes. Only 31 percent of those previously working returned to employment. No differences were found in mean age, physical disability, or anxiety; however, those not working were significantly more depressed ($P < .05$). A major factor related to failure to return to work may be that the majority of this lower socioeconomic group of patients worked as laborers and did not have the education or training to find alternative jobs.

An editorial in the *British Medical Journal* recently defined rehabilitation as the "process by which sick patients are restored as quickly and efficiently as possible to a healthy, contented, and useful life."[1] One of the important ways rehabilitation has been evaluated in post-myocardial infarction (MI) patients is return to work. Despite shorter periods of hospitalization and earlier attempts to promote physical activity, many patients do not return to work following myocardial infarction.

The purpose of this pilot study was to examine work return rates and factors which may influence a patient's ability to return to work in a lower socioeconomic, urban population. Forty-five consecutive male patients seen in the Los Angeles County-University of Southern California Medical Center post-infarction clinic were studied. All were reviewed at least one year since their most recent MI.

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METHODS

Forty-five consecutive male patients under the age of 60 with documented myocardial infarctions which had occurred at least 12 months prior were interviewed by a psychiatrist during a routine follow-up visit to the post-infarction clinic. Demographic data was collected as well as a history of previous infarctions, current medications, and work history. The New York Heart Association (NYHA) functional classification[2] was independently determined to assess physical disability and the Hopkins Symptom Checklist[3,4] was administered to evaluate anxiety and depression.

RESULTS

The population studied had a mean age of 52.5 years (range 30-60). Ethnic breakdown was as follows: Caucasian, 16 (36 percent), Mexican-American, 11 (24 percent), Black, 16 (36 percent), and Oriental, 2 (4 percent).

The majority of patients were in the lower socioeconomic classes as determined by the Hollingshead Two-Factor Index of social position.[5] Thirty-nine patients (87 percent of the sample) were in social classes IV and V, the remaining six (13 percent of the sample) were in social class III.

Patient interviews and medical records revealed 72 percent of patients had experienced only one infarction and the remaining 28 percent had a history of two or more infarctions. The length of time since the most recent infarction in the overall group is shown in Table 1.

Prior to the most recent myocardial infarction, 78 percent were working, 17 percent were unemployed, and 5 percent were on medical disability. At the time of the study (at least 12 months since

TABLE 1. LENGTH OF TIME POST-MI

Time since last MI	N (Percent)
1-2 yrs	10 (22)
2-5 yrs	13 (29)
> 5 yrs	22 (49)

infarction for each patient) 22 percent were working, 4 percent were unemployed, and 74 percent were on disability. Thirty-one percent of those previously working returned to their jobs or found new employment.

In an attempt to discover why so few patients returned to work, several variables that might add to an understanding of the problem, including age, New York Heart Association classification of physical disability, anxiety, and depression (Table 2), were examined. There was no difference between working and nonworking patients in functional physical disability (NYHA functional classification), mean age, or anxiety scores. A significant difference was found in depression scores. The nonworking group had significantly higher depression scores on psychological testing than the working group. Of those with a first MI, 45 percent of those previously working returned to work. None of the ten patients working at the time of a second or third MI returned to work. This difference was striking considering these patients had no greater functional physical disability than those with a first MI in this study group.

DISCUSSION

A review of the literature reveals a work return rate at one year post infarction between 77 and 90 percent (Table 3).

Although the authors' follow-up periods tend to be longer than the studies reviewed here, results are comparable because all of the authors' patients returning to work had done so within one year after their last MI.

The overall return to work rate of 31 percent contrasts sharply with the 77-90 percent return to work rates of other investigators. Sampling error was considered but a previous prospective study in this clinic following consecutive patients from the CCU (and thereby eliminating the need to return to clinic to be included in the study) showed similar results.[10] In this previous study 54 males and three females with a mean age of 44 were followed after their myocardial infarctions for one year. At that time 33 percent of those previously working had returned to employment, a figure comparable with the authors' 31 percent.

Why do so few patients return to work? There is no reason to suspect that these patients are more physically ill than other populations studied. Even within this group, severity of disability measured by NYHA scores showed no difference in those working compared to those not working.

The most common non-cardiac causes of persistent invalidism post myocardial infarction are depression and anxiety as documented in repeated studies; these are independent of severity of physical disability.[6,8,9,11-13] In this study the Hopkins Symptom Checklist was used to evaluate anxiety and depression levels by a self-administered checkoff test. Anxiety levels did not discriminate between working and nonworking groups but a trend to more anxiety in nonworking patients was observed ($P < .10$). Depression levels were, however, significantly greater in nonworking patients compared to those who were working. This, however, does not fully explain the low work return rates unless a much larger number of these patients suffer from disabling depression than do patients in other studies. This was not felt to be the case during clinical interviews done for the study. This study did not attempt to differentiate depression that might be a cause for failure to return to work from what might be caused by inability to return to work.

A second uninvestigated hypothesis as to why return to work rates were so low in the authors' population relates to social conditions. Most of these lower socioeconomic patients are unskilled and work as laborers. If advised to do lighter work after a heart attack, they usually do not have the education or training for clerical or similar work and cannot find a suitable job. In addition, poor advice from family, friends, or employers can undermine the confidence of a patient considering return to work.

Weinblatt and associates[7] followed 275 post-infarction patients; at 18 months follow-up, they

TABLE 2. RETURN TO WORK VARIABLES

Variable	Returned to Working (10)	Not Working (35)	P
NYHA	1.67	2.04	NS
Age	54.1	60.0	NS
Anxiety	.62	.76	NS
Depression	.58	.90	<.05

TABLE 3. LITERATURE REVIEW

Study	Age (years)	Follow-Up	Return to Work (%)	Sample Size
Wincott,[6] 1966	< 70	1 year	88	65
Weinblatt,[7] 1966	<64	10 months	90	275
Cay,[8] 1973	<79	1 year	77	203
Stern,[9] 1977	<70	1 year	78	68

found that within a given class of overall physical activity, the proportion of blue collar workers returning to employment was practically always less than the corresponding white collar group. They cite the role of Workmen's Compensation rulings, disability pensions, and the relative inflexibility of employers of blue collar workers in offering less strenuous employment as possible contributors to the differences observed.

Completed studies from this Medical Center (using life-change rating scales) have documented the apparently high stress levels associated with myocardial infarction in this socioeconomic setting and further studies are in progress (Obier K, de Guzman M, Haywood LJ, unpublished data).

The authors intend to further explore these preliminary findings by studying a larger number of patients prospectively with greater attention to controlling for physical disability. If these findings are confirmed, it would seem that lower socioeconomic patients with myocardial infarction are at particularly high risk to become chronically disabled on psychosocial grounds. This has important implications for patient care because the psychosocial aspects of rehabilitation have not been emphasized in this patient group. Further study may establish whether psychosocial intervention can improve the outlook for return to work in this population.

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