On the other side of the coin, a few podiatrists raised the possibility that in the future the functions of podiatry might be subsumed under medicine and the profession might eventually lose its separate identity. The rationale is a matter of economics. The federal government, as part of a general cutback in funds for education, has reduced support to schools of podiatry and loans to students. Further reductions would make it most difficult to operate the schools. Although presently covered for reimbursement for Medicare and Medicaid patients, future contractions could eliminate podiatric benefits. This could also occur with private insurers. The number of active physicians is expected to increase by 32 per cent between 1980–1990. It is predicted this may result in an over supply.[3] Under these conditions, family practitioners might care for minor foot problems while attending to other health needs. More complicated foot problems would be referred to an orthopedic surgeon. In this manner, podiatry as a separate profession would be phased out.

It must be kept in mind that these data are derived from podiatrists in only one state. It is possible that the Virginia location may affect hospital privileges, attitudes, and even relationships. The representativeness of this sample on a national basis is subject to wider geographical sampling.

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Health Status of Survivors of Out-of-Hospital Cardiac Arrest Six Months Later

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Abstract: The health status of long-term survivors of out-of-hospital cardiac arrest was studied six months after the event. Although Sickness Impact Profile scores for arrest survivors were higher (worse) than scores of enrollees in a prepaid closed panel health plan, in most cases problems of survivors were not incapacitating. Approximately three-fifths of survivors reported same or better memory function and stair climbing ability compared to that at time of arrest. Three-fifths of those who had been working continued to do so. (*Am J Public Health* 1984; 74:508–510.)

Introduction

The feasibility of resuscitation from out-of-hospital cardiac arrest has been well documented and survival to hospital discharge as high as 33 per cent has been reported.[1] To determine the functional status of survivors from cardiac arrest, we studied a large case series using a standardized measurement instrument which is sensitive to the multidimensional nature of functional status.

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Methods

Survivors of cardiac arrest who were alive six months after the event were interviewed to determine their level of functioning. We studied patients whose cardiac arrest occurred in suburban King County (Washington) between April 1, 1976 and March 30, 1980 and in Seattle, Washington between September 1, 1976 and March 30, 1980. Cases were at least 18 years of age and their cardiac arrest outside of a hospital had been confirmed by emergency medical personnel. Arrests due to trauma and other non-cardiac conditions were excluded. Case identification was believed to be virtually complete.[2]

The principal research tool was the Sickness Impact Profile (SIP), a standardized interview that measures sickness-related dysfunction. The SIP consists of 136 questions which are grouped into 12 categories, each describing an area of activity in which dysfunctional behavior may occur.[3,4] A score for each of the categories may be calculated, as well as a psychosocial dimension score, a physical dimension score, and an overall SIP score. As the level of dysfunction experienced by the subject rises, so does the SIP score.*

In addition to the SIP, the interview covered hospitalizations, perceptions of ability to use stairs, irritability, memory, employment, and other life changes since the event. Questions about heart disease, hypertension, and medication before the cardiac arrest were added to the interview during the study.*

* More complete information available on request to author.

A comparison group was drawn from a random sample of 495 enrollees in Group Health Cooperative of Puget Sound (GHC),** who had been interviewed in 1975–76 during the development of the SIP.[5] For the present study, the comparison group consists of a random subset of the Group Health sample chosen so as to have a frequency distribution of age and sex similar to that of the cardiac arrest patients.

Since the 12 SIP category scores are intercorrelated, the number and magnitude of statistically significant results obtained by examining category data alone may be overstated. A better estimate of the significance of the differences between the groups is provided by the significance levels of the SIP total and dimension scores.

Results

Four hundred and seventy-two survivors of cardiac arrest were eligible for study; 424 interviews were conducted. The 48 patients not interviewed were similar to the 424 interviewed in demographic characteristics and in service factors surrounding the resuscitation: citizen cardiopulmonary resuscitation (CPR), time to initiation of CPR, response time of first arriving emergency unit, time to arrival of definitive care.

Sixty-four of the 424 survivors were less than 50 years of age; 125 were 50–59; 134 were 60–69; 101 were over 70 years of age. There were low but significant correlations between age and SIP categories of Household Management (r = .19), Mobility (r = .17), Ambulation (r = .23, and the Physical Dimension (r = .17).

In six of the 12 SIP categories and the psychosocial dimension, scores for women were significantly higher than for men. Differences between the sexes remained after adjusting for the effect of age on SIP scores by an analysis of variance.

The SIP scores for cardiac arrest survivors were significantly higher than scores of a sample of enrollees of a prepaid closed panel health plan serving the same geographic areas and who were not apparently ill at time of interview. These differences were seen in every category score (Figure 1). Of 190 patients who were asked, 73 per cent acknowledged the existence of previous heart disease or high blood pressure and 32 per cent said they had taken related medication at some time before the cardiac arrest. Forty-four per cent reported having had a previous hospitalization related to a heart attack.

Responses to a question about current ability to climb stairs compared to ability before the cardiac arrest are shown in Table 1. The SIP scores in the Ambulation category are consistent with these responses.

Reported Memory function at time of interview compared with how it was before the cardiac arrest is also shown in Table 1. The pattern of SIP scores in the Alertness category is consistent for the large numbers of respondents who said their memories were the same or worse than before the arrest. The small number of respondents who said their memory function was better had Alertness scores approximately midway between the two other groups.

** GHC is a prepaid closed panel group practice with more than 280,000 enrollees in the Puget Sound area. Most members reside in King County, which includes Seattle. The Group Health population is demographically similar to the population of King County except for an underrepresentation of very low and very high economic groups.

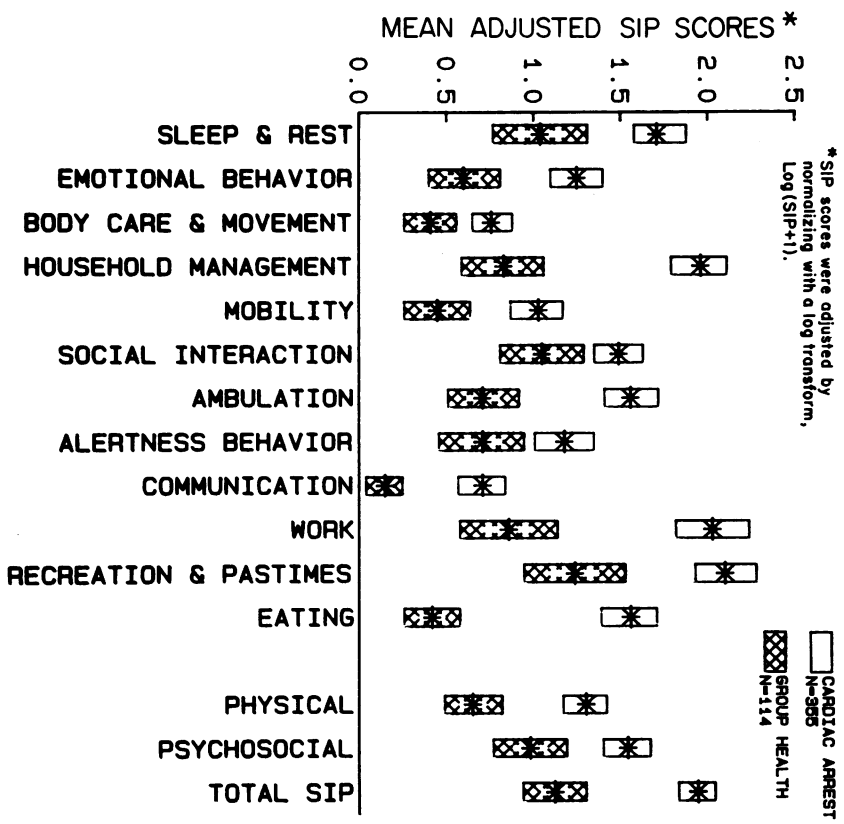

FIGURE 1—Mean Adjusted SIP Scores* and 95% Confidence Intervals for Cardiac Arrest Patients and Group Health Enrollees.

TABLE 1—Stair Climbing Ability and Memory Function of Cardiac Arrest Survivors and Related SIP Category Scores: Current Function as Compared to Function Prior to Cardiac Arrest

	Per Cent of Survivors	SIP Category Score
(N = 416)	Stair Climbing	Ambulation
Better	12	5.8
Same	44	6.7
Worse	44	17.7
(N = 424)	Memory Function	Alertness
Better	4	14.7
Same	60	5.2
Worse	36	27.6

TABLE 2—Survivors of Cardiac Arrest: Work Status of 424 Individuals at Time of Cardiac Arrest and Time of Interview and SIP Work Category Score at Interview

	At Time of Interview		
	Full-Time N = 91 (21)	Part-Time N = 37 (9)	Not Working N = 296 (70)
At Time of Cardiac Arrest	SIP = 7.3	SIP = 20.3	SIP = 34.4
Full-Time N = 170 (40)	87 (51)	18 (11)	65 (38)
Part-Time N = 36 (8)	2 (6)	18 (50)	16 (44)
Not Working N = 218 (51)	2 (1)	1 (-)	215 (99)

NOTE: Per cents shown in parentheses.

Work status at time of cardiac arrest and time of interview are shown in Table 2. SIP Work category scores for all patients classified by work status at the time of cardiac arrest were similar. When classified by work status at time of interview there was a clear relationship. Full-time workers had the lowest (best) and not employed had the highest (worst) scores.

One hundred three respondents (25 per cent) reported one hospitalization; 48 (11 per cent) two; nine (2 per cent) three; and eight (2 per cent) four or more. Among the reasons for hospitalizations, cardiac disease accounted for 31 per cent and surgery for 31 per cent (virtually all of the surgery was coronary bypass). SIP scores were unrelated to number of hospitalizations except for the few cases that had four or more hospitalizations.

Discussion

Although we did not attempt to obtain detailed medical histories and there were no pre-arrest SIP scores for comparison, some patients had important pre-event levels of dysfunction owing to heart disease. Given this pre-event history, it is not surprising that survivors of cardiac arrest have significantly greater dysfunction than their peers, as measured by the SIP. The high SIP scores of the cardiac arrest patients are not due to a few extreme cases. Forty per cent of the cardiac arrest patients had total SIP scores above the mean value of 10. Differences between survivors and peers are so great as to suggest clinical as well as statistical significance. This is especially marked in Household Management, Ambulation, and Work. Still, most survivors are living at home and seem to be operating independently. More than three-fifths of those who had been working prior to their cardiac arrest were working six months later. Given the age distribution and the nature and severity of their disease, these patients did not require an excessive number of hospitalizations in the six months following discharge nor were more than a few in extended care facilities.

Although this group of long-term survivors of out-of-hospital cardiac arrest represents only a portion (16–26 per cent) of all cardiac arrests, their level of functioning and use of medical care suggests that many are carrying on their lives as they did prior to the arrest. These results support the value of efforts to resuscitate out-of-hospital cardiac arrest victims.

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