

## INTERNATIONAL SURVEY ON THE PSYCHOLOGICAL ASPECTS OF CARDIAC REHABILITATION

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**ABSTRACT.** Data on the psychological aspects of cardiac rehabilitation was collected by mail questionnaires. Fifty-five individuals from 30 different countries responded to this questionnaire. The results indicate some of the psychological problems confronted by cardiacs, and point up the need for more exhaustive international studies on this important area of cardiac rehabilitation.

At the first meeting of the Council on Rehabilitation of the International Society of Cardiology, held in Sardinia, Italy in June, 1968 it was requested that a survey be done on the Psychological Aspects of Cardiac Rehabilitation. The purpose of this survey was to determine from professionals throughout the world, what psychological problems the cardiac individual faced in returning to his former activities; the techniques these professionals used in overcoming these psychological problems; and what direction if any these professionals felt that the Council on Rehabilitation should take in helping them in this area of cardiac rehabilitation.

### METHODS

The following questionnaire entitled "Survey on Psychological Aspects of Cardiac Rehabilitation" was developed and sent to the Presidents of the Constituent Societies of the International Society of Cardiology (1) in March 1969.

One hundred and eleven questionnaires were set out, and 68 individuals responded (61%). Thirteen of the individuals responded by letters indicating that they were not sufficiently informed to answer the questions on the survey form. Fifty-five individuals completed the survey form.

- A. Name
- B. Age

<sup>1</sup> Paper read at the Council in Rehabilitation of the International Society of Cardiology

- C. Address (include country)
- D. What is your profession (please specify)?
- E. Do you work with cardiacs only?
- F. What percentage of your time do you work with cardiacs?
- G. How many cardiacs do you see in a year?
- H. What kinds of cardiac patients do you work with (please specify e.g. rheumatic fever, coronary occlusion)?
- I. What are the main psychological problems of the cardiac?
- J. What psychological variables do you find pose barriers to cardiac individuals returning to their former activities?
- K. What tests, techniques or methods are used in your country to evaluate the psychological factors of the cardiac?
- L. What percentage of cardiacs that you see return to their former activities?
- M. What percentage of those cardiacs that you see do not return to their former activities because of psychological factors?
- N. What percentage of those cardiacs that you see return to certain activities when they should not do so because of cardiac limitations?
- O. What percentage of your patients think they have heart disease but do not have heart disease?
- P. Are there any services or agencies available in your country to help cardiacs with psychological problems?
- Q. Are there any special psychological problems faced by the cardiacs in your country that would be of interest to professionals in other countries that you might be interested in writing about, or presenting to the International Society of Cardiology?
- R. Is there any way in which the Committee on Psychological Aspects of Cardiac Rehabilitation might be of help to you?
- S. Could you suggest ways in which the Committee on Psychological Aspects might be of help to either the cardiacs or the professionals who work with them?
- T. Do you have any publications on Psychological Aspects of Cardiac Rehabilitation? List publications that you feel would be of help to others interested in this area.

Table I. Age of respondents

Age <sup>a</sup>	N <sup>b</sup>	%
25-35	6	11
36-45	23	42
46-55	14	25
56-65	9	16
66-70	3	6

<sup>a</sup> Range = 27-69; average = 46.

<sup>b</sup> N = 55.

Table II. Professions of respondents

Profession	N <sup>a</sup>	%
Cardiologist	21 <sup>b</sup>	38
Physicians (including medical school faculty)	18	33
Psychiatrist	4	7
Psychologist	10	18
Social worker	2	4

<sup>a</sup> N = 55.

<sup>b</sup> Three of the 21 cardiologists specialize in pediatric cardiology.

Table III. Exclusive work with cardiacs

Response	N <sup>a</sup>	%
Yes	18	32.7
No	37	67.3

<sup>a</sup> N = 55.

## RESULTS

As indicated in Table I, 55 individuals completed the survey form. Their ages ranged between 27 years and 69 years, with an average of 46 years.

The professional composition of the group that answered the survey is indicated in Table II. Seventy-eight percent were physicians (21 cardiologists, 18 general practitioners, and 7 psychiatrists). Eighteen percent were psychologists and 4% were social workers. All of the respondents were actively working with cardiacs in their professional practice.

Table III represents the responses of the respondents to the question: "Do you work with cardiacs only?" One third answered in the affirmative, and at least two-thirds indicate that their practice included other types of patients in addition to cardiacs.

As shown in Table IV when asked the question "What percentage of the time do you work with cardiacs?", 46 of the 55 respondents answered the question. The cardiologists indicated that they worked with cardiacs 86% of the time; the medical school faculty had an average of 36.8% of their time devoted to working with cardiacs. General practitioners that answered revealed that 50% of their practice involved work with cardiacs. The psychiatrists that responded spent 48% of their time with cardiac patients. The psychologists and social workers combined revealed an average of 39.5% of their time spent with cardiac patients.

Table V indicates the average number of patients seen by the respondents. Forty-nine responses to question "G" were received. Six individuals did not answer this question. The cardiologists saw an average of 1 545 patients a year, the general practitioners including medical school faculty, saw an average of 1 207 patients. The psychiatrists, social workers and psychologists saw an average of 232 patients a year.

Table VI is a list of the cardiac disorders as given by the respondents in answer to the question, "H. What kind of cardiac patients do you work with?". Fifty of the 55 respondents an-

Table IV. Percentage of time spent on work with cardiacs

Profession	N <sup>a</sup>	Time (%)
Cardiologist	17	86.47
Medical school faculty	8	36.80
Physicians	10	50.00
Psychiatrist	3	48.00
Clinical psychologist and social worker	8	39.50

<sup>a</sup> N = 46.

Table V. Number of cardiacs seen in a year

Profession	N <sup>a</sup>	Range	Average
Cardiologist	21	418-5 000	1 545
Physicians and medical school faculty	13	50-6 000	1 207
Psychiatrist, psychologist, and social worker	15	12-1 500	232

<sup>a</sup> N = 49.



swered this question. The most frequently seen cardiac disorders were "coronary occlusion", "rheumatic fever", "hypertension", and "congestive heart failure". A number of the disorders listed overlap with others, and no attempt was made to reclassify the responses.

A listing of the main psychological problems as perceived by the 55 respondents are given in Table VII. The psychological problems most frequently mentioned were "anxiety (38%), "fear of sudden death" (20%), "lack of confidence", "loss of motivation (18%) (in their ability to return to work or previous activities), and fear of recurrence of heart disease (16%). Psychological problems that were mentioned 10% or less were: overambitious, overconcern with their condition, depression, misconceptions of cardiac symptoms, inability to accept and adjust to restriction, fear of losing employment, and overly dependent. Those psychological problems mentioned by 5% or less of the respondents were: fear of sexual inadequacy, hostility, mental and family readjustment problems, guilt feelings, fear of being left alone, and inability to relax.

Forty-eight (87%) of the 55 respondents an-

Table VI. *Types of cardiacs worked with*

Type of cardiac	No. respondents working with these patients	% <sup>a</sup>
Coronary occlusion	27	54
Rheumatic fever	22	44
Hypertension	16	32
Congestive heart failure	14	28
Myocardial infarction	7	14
Arteriosclerosis	5	10
Ischemic heart disease	5	10
All types of cardiac patients	5	10
Neurosis	3	6
Angina pectoris	3	6
Arrhythmia	2	4
Neurocirculatory asthenia	2	4
Peripheral vascular disease	1	2
Cardiovascular disease	1	2
Vascular disease	1	2
Pacemaker implantation	1	2
Cor pulmonale	1	2
Functional disorders of heart and circulation	1	2
Valvular insufficiency	1	2
Iatrogenic heart disease	1	2
High altitude cardiopulmonary <sup>b</sup>	1	2
Chagas disease	1	2

<sup>a</sup> N = 50.

<sup>b</sup> Listed by cardiologist from South America.

Table VII. *Main psychological problems of the cardiac*

Problem	N <sup>a</sup>	%
Anxiety	21	38.1
Fear of sudden death	11	20.0
Lack of confidence—loss of motivation, in their ability to return to work or previous activities	10	18.2
Fear of recurrence of heart disease	9	16.4
Hyperdynamic (overambitious, trying to exceed limitations)	6	10.9
Hypersensitive (overconcern with condition)	5	9.1
Depression	5	9.1
Misconceptions of cardiac symptoms	4	7.3
Inability to accept and adjust to restrictions	4	7.3
Fear loss of employment (financial, economic worries)	4	7.3
Overly dependent	4	7.3
Fear of sexual inadequacy	3	5.5
Hostility	3	5.5
Marital and family readjustment problems	3	5.5
Other problems <sup>b</sup>	4	7.3

<sup>a</sup> N = 55.

<sup>b</sup> Quiet feelings, fear of being left alone, helpless, inability to relax.

swered the question, "What psychological variables pose barriers to cardiacs returning to their former activities." The most frequent response to this question was that cardiacs fear a recurrence of heart disease if they return to work (37%). Other important barriers as indicated in Table VIII are anxiety, depression and guilt on the part of the patient (16%), and influence of the physician (16%). Barriers mentioned 5% of the time or less were, "fear of insufficient work capacity", "invalid syndrome", "employers ignorance or prejudice toward hiring cardiacs", and "fear of sudden death".

Table VIII. *Psychological variables posing barriers to cardiacs return to former activities*

Variable	N <sup>a</sup>	%
Cardiacs fear recurrence of heart disease if they return to work	18	37.5
Anxiety, depression, guilt	8	16.6
Influence of the physician	8	16.6
Fear of insufficient work capacity	5	10.4
"Invalid syndrome"	5	10.4
Employers ignorance or prejudice toward hiring cardiacs	5	10.4
Fear of sudden death	4	8.3

<sup>a</sup> N = 48.

Table IX. Tests, techniques or methods used in country to evaluate psychological factors of cardiacs

Method	N <sup>a</sup>	%
Interview (including case history)	25	50
Minnesota multiphasic personality inventory	10	20
Rorschach	7	14
Rosenzweig	6	12
Galvanic skin response	2	4
Intelligence test	2	4
Other psychological tests <sup>b</sup>	5	10
Other special tests <sup>c</sup>	4	8

<sup>a</sup> N = 50.<sup>b</sup> Luscher Personality Test, Bender-Gestalt, Thematic Apperception Test, Yatobi-Guilford, Perceived Exertion, and E.C.G. plus interview.<sup>c</sup> Physical fitness (cycling), chemical tests, (free fatty acid in serum), hypnosis.

Table X. Percentage of cardiacs seen that return to former activities

N <sup>a</sup>	% <sup>b</sup>
2	0-25
6	26-50
17	51-75
14	76-100

<sup>a</sup> N = 39.<sup>b</sup> Range = 10-98 %, average = 67.83 % of cardiac patients return to their former activities.

Table IX lists the techniques and methods used to evaluate psychological factors. Fifty of the 55 respondents answered this question. Sixteen of those who answered indicated that there were no "special evaluative techniques" used in their country. The methods most frequently used to evaluate the psychological factors are the interview and case history method (50 %). The personality test most frequently reported was the Minnesota Multiphasic Personality Inventory (20 %).

As shown in Table X, 39 of the respondents answered the question "What percentage of cardiacs that you see return to their former work?" A range of 10 % to 98 % was reported. The average reported was 67.83 %. In addition, three respondents did not give a numerical percentage but stated that, "The differences between outpatients and those in the hospital are largely due to the physicians influence"; "many coronary pa-

tients benefit from modified employment with reduced responsibility and stress"; and the third indicated that it was necessary to distinguish between every type of heart disease to answer this question.

When asked what percentage of cardiacs do not return to their former activities because of psychological factors, the range varied from 2 % to 50 % with an average of 15.7. As indicated in Table XI, 35 (64 %) of the respondents answered this question.

When asked what percentage of those cardiacs that you see return to certain activities when they should not do so because of cardiac limitations, the range of responses was from 1 to 85 %, with an average of 18.2 %. In addition to the 29 who gave a percentage rating, seven respondents answered few or no cardiacs return to work. Two pediatric cardiologists answered that it is difficult to limit children because a great deal depends on the attitude of the family. One respondent wrote that cardiacs employed in professions want to resume their activities even if they are physically unable to do so. The motive for doing so was a "desire to continue their loved work and economic factors". Retirement and disability allowances

Table XI. Percentage of cardiacs seen that do not return to former activities due to psychological factors

N <sup>a</sup>	% <sup>b</sup>
15	0-10
13	11-20
4	21-30
2	31-40
1	41-50

<sup>a</sup> N = 35.<sup>b</sup> Range = 2 to 50 %; average = 15.7 %.

Table XII. Percentage of cardiacs seen that return to certain activities when they should not do so due to cardiac limitations

N <sup>a</sup>	% <sup>b</sup>
21	0-20
5	21-40
1	41-60
1	61-80
1	81-100

<sup>a</sup> N = 29.<sup>b</sup> Range = 1-85 %; average = 18.2 %.



when low would lower the standard of living to a great extent. It was also indicated that employers and society in general overestimate the degree of impairment, and this serves as a barrier to cardiacs return to work. Where insurance disability was high, it was felt that this precluded any cardiac from considering returning to work.

Table XIII lists the percentage of cardiac patients that think they have heart disease but do not have heart disease. The range was from one to 60% of patients seen by the respondents with an average of 24.3%. Fourteen (25.5%) of the respondents did not answer this question. Two of the latter group could not answer this question because they only work with actual cardiacs.

When asked if there were any services or agencies available in their country to help cardiacs with psychological problems, 50 (90.9%) of the 55 respondents answered this question. In 25 of

Table XIII. Percentage of patients thinking they have heart disease that do not

N <sup>a</sup>	% <sup>b</sup>
16	0-15
16	16-30
6	31-45
3	46-60

<sup>a</sup> N = 41.

<sup>b</sup> Range = 1-60%; average = 24.3%.

Table XIV. Services or agencies available in country to help cardiacs with psychological problems

Type of agency	N <sup>a</sup>	%
Vocational rehabilitation center	7	28
Heart associations (foundations)	4	16
Psychiatric and mental health services	4	16
Hospital services		
Medical school	3	12
Mental out-patient service	2	8
Psychiatric department	2	8
Internal medicine department	2	8
Psychosomatic medicine department	1	4
Hospital of cardiology	1	4
Veteran's administration	1	4
Mental infantile hygiene service	1	4
Cardiac work evaluation units	1	4
Society for prevention of heart diseases and rehabilitation	1	4
"Coronary club"—sponsored by the country's rotary club	1	4

<sup>a</sup> N = 50; of the fifty, twenty-five answered "no" or "do not know".

Table XV. Ways in which a committee on psychological aspects of cardiac rehabilitation might help

Suggestion	N <sup>a</sup>	%
Publish and encourage research data on the psychological aspects of cardiacs rehabilitation	26	66.6
Publications should be translated into French and German if not all local languages	3	7.6
Supply addresses and names of doctors and psychologists around the world who are interested in the same problem	2	5.1
Research should be focused on the psychological aspects of acute coronary patients between 25 and 55	1	2.5
Information from the committee would indicate if there is a validity for comparison to other cultural settings	1	2.5
Results of this and similar studies could be applied to public security institutions where ill people continue to receive salaries	1	2.5
Help convince other physicians and agencies that cardiacs can work and do a good job	1	2.5
A standardized questionnaire should be developed to evaluate cardiacs psychologically	1	2.5
A center for cardiac rehabilitation should be set up by the government	1	2.5
Supply funds for research	1	2.5
One physician suggests that the committee take up for discussion his model of interindividual comparisons and evaluations of the effects of physical training on some psychological and physiological variables	1	2.5

<sup>a</sup> N = 39.

the responses, the answer was "no" or "not known". The 25 who gave the name of an agency that could help cardiacs with psychological problems listed vocational rehabilitation centers (23%), Heart Associations (16%), and Hospital Services (including medical school, psychiatric department, out-patient mental health services, internal medicine department, hospital of cardiology) 32%.

As revealed in Table XV, 39 of the 55 respondents answered the question, "Is there any way in which a committee on Psychological Aspects of Cardiac Rehabilitation might be of help to you?" Of those who responded the majority (66.6%) indicated that a committee would be most helpful in publishing and encouraging research data in the psychological aspects of cardiac rehabilitation.

Table XVI. Ways in which the committee on psychological aspects might help cardiacs or the professionals who work with them

Suggestion	N <sup>a</sup>	%
Pamphlets and other literature to be printed for the cardiac, to dispel anxieties that occur due to lack of knowledge		
(a) pamphlets should be translated into the local language		
(b) pamphlets should be entitled "Psychological Aspects of Cardiac Rehabilitation"		
(c) pamphlets would also benefit employers and insurance companies	17	45.9
Frequent symposiums of professionals to create personal contacts, exchange ideas, and supply variables from research studies		
(a) group therapy should be conducted for cardiacs		
(b) special panels should be created in International Congresses of Cardiology	6	16.2
An internationally recognized health body is necessary to devise a plan and provide funds for research		
(a) would be part of WHO or The Ministry of Labor		
(b) would encourage cooperation in comparative studies of cardiac problems in different countries		
(c) would help establish priorities for medically certified cardiacs in obtaining suitable sedentary jobs; would establish government policy		
(d) could be under the auspices of National Cardiology Societies		
(e) society would publish periodic reports in their National Journals of Cardiology		
(f) topic of cardiac rehabilitation would be included in their Congresses and help establish uniform criteria for discussion of the subject	5	13.5
A standardized questionnaire be developed to psychologically evaluate cardiacs	2	5.4
A Cardiac Rehabilitation Center should be established in every large city	1	2.7
The employment of psychological counselors and group therapists should be encouraged	1	2.7
Cardiac Work Evaluation Units should be established similar to work adjustment programs that exist for the mentally ill with physical handicaps	1	2.7
Research on psychological convalescence should be conveyed to M.D.'s	1	2.7
Benefit physicians working in public social security centers	1	2.7
Should sponsor a project for the PA of cardiacs in India	1	2.7
A South American physician is interested in working on the development of programs, charts, illustrations, and short movies about the "meaning of high altitude" for laymen to inform them about the "bad and good" things about high altitude	1	2.7

<sup>a</sup> N = 37.

Table XVII. Percentage having publications on psychological aspects of cardiac rehabilitation

Response	N <sup>a</sup>	%
Yes	23	41.8
No	32	58.2

<sup>a</sup> N = 55.

Table XVI shows the suggestions made by the 45 respondents who answered the question, "Can you suggest ways in which the committee on Psychological Aspects might be of help to either the cardiacs or the professionals who work with them?" The suggestions include writing pamphlets on the psychological aspects of cardiac rehabilitation for cardiacs, employers, and insurance companies and also symposiums and plans for cooperative research.

## DISCUSSION

A mail questionnaire on some of the psychological aspects of cardiac rehabilitation was sent to 111 organizations and individuals (1) whose major interest was heart disease. At the time of mailing in 1969 the interests of these organizations and individuals regarding the area of "rehabilitation" and more specifically the "psychological aspects of cardiac rehabilitation" was unknown. Indeed the questionnaire served as a means for tracking down individuals who were interested in this area of the psychological aspects of cardiac rehabilitation. Sixty-eight responses from 30 countries were received of which 2% indicated that they did not have sufficient information to respond to the questionnaire. International surveys conducted by mail are fallible (2), and it must be recognized that 39% were non respondents whose characteristics are unknown. This survey is a necessary first step in gathering more specific and more reliable knowledge regarding the psychological problems and techniques used to resolve these problems in rehabilitating the individual with heart disease.

The characteristics of the 55 individuals who responded to the questionnaire (61% responses) reveal that they had an average age of 46 years. Seventy-one percent of this sample were either cardiologists or general practitioners who, respec-



tively, spent 86% and 50% of their time in working with cardiacs. The psychiatrists (7%) spent 48% of their time with cardiacs; the psychologists and social workers who responded spent an average of 40% of their time in working with cardiacs. Coronary occlusions and rheumatic fever were the major heart diseases with which the respondents spent most of their time.

The psychological problems of cardiacs most frequently recognized by the respondents were "anxiety", "fear of sudden death", and "loss of motivation in their ability to return to previous activities". The main psychological barriers to return to former activities was fear of recurrence of heart disease if they return to work, and role of the physician in handling the "cardiacs, fears". The techniques used in evaluating psychological factors was the interview, and case history, and the testing techniques most frequently mentioned was the Minnesota Multiphasic Personality Inventory.

The respondents indicated that based on their clinical experience 68% of the cardiac patients return to their former activities. An average of 16% of the cardiacs seen by the respondents do not return to work because of psychological factors. Twenty-five per cent of the cardiacs return to certain activities when they should not do so due to cardiac limitations. The respondents report an average of 24%, when asked, 'what percentage of your patients think they have heart disease when they do not have heart disease?'

When asked where cardiacs with psychological problems are referred for treatment approximately  $\frac{1}{2}$  the respondents indicated that they did not have a referral source. Vocational rehabilitation centers, heart associations and mental health ser-

vices were the main sources indicated by those who answered this question.

Over  $\frac{2}{3}$  of the respondents indicated a need for publishing and encouraging research on the psychological aspects of cardiac rehabilitation. A need for printed materials to dispel the anxieties of cardiacs was emphasized.

This survey has identified certain psychological aspects of cardiac rehabilitation as seen by professionals actively engaged in treating cardiacs in 30 different countries. It recommends and suggests the need for more exhaustive psychological studies in a variety of areas related to cardiac rehabilitation. If countries regularly gathered psychological data about cardiac rehabilitation, then international organizations will be able to conduct many appropriate world-wide studies that can be a major means for sharing of knowledge and contributing to the rehabilitation of individuals with heart disease.

#### ACKNOWLEDGEMENT

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