FACTORS CAUSING SOCIAL STRESS --
RHEUMATIC HEART DISEASE

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ABSTRACT

TITLE: Factors Causing Social Stress - Rheumatic Heart Disease

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OBJECTIVE AND METHOD: To investigate the existence of factors in illness which precipitate or increase social stress. To determine the actual presence of such factors in the specific illness, rheumatic heart disease, and the general types of social and emotional consequences precipitated by the factors. The case study method was used. Information on 15 cases was gathered through interviews. Findings from 10 additional patients interviewed by social service staff were added, bringing to 25 the total number of cases studied. All patients were seen between July 1954 and March 1955. Interviews took place in the University of Wisconsin Hospitals or Out Patient Department.

FINDINGS AND CONCLUSIONS: The data gathered validated the objectives of the study. All the anticipated factors were found to be present and to have resulted in a substantial number of adverse consequences.

Many patients felt that their heart disease was a result of inadequate care during the active stage of rheumatic fever. Blame of their parents or of the physician who attended them at that time was a frequent reaction. In the majority of the

25 cases the patient was concerned over the progressive severity of his cardiac symptoms which had increased his dependency on others and had led to difficulty in maintaining control over various life situations. Limited accomplishment due to low activity tolerance seemed to be especially difficult to accept for both male and female patients and tended to create feelings of unworthiness. Vocational problems were prominent for some male patients who were forced to seek a less strenuous type of employment. Financial stress due to decreased earning capacity was also found to be a significant problem. Cardiac symptoms and fear of a sudden heart attack tended to create anxiety and fear of death.

The symptomatology of the disease seemed to create more problems for the patients under study than the actual treatment. However, the expenses for continuing medical care appeared to be a real problem in the majority of the cases studied. Hospitalization seemed also to be a major source of stress for many patients, especially females who felt that it disrupted normal family life.

It is hoped that this study will be valuable in the teaching of various professions in the field of medicine when its content has been incorporated in the larger research project which includes four chronic diseases; namely, diabetes, epilepsy, rheumatoid arthritis and rheumatic heart disease.

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CHAPTER I

INTRODUCTION

The relationship between mind and body, psyche and soma has been observed since ancient times. Although medicine at the end of the last century passed through a stage when it was mainly a laboratory science with interest focused on pathological changes in the body, there has during the last decades been a swing back towards increased interest in the patient as a whole. Thus a special branch of medicine, psychosomatic medicine, has developed and is based on the concept that emotional stress may cause functional disturbances of any organ in the body and even bring about structural changes. However, the focus on psychic factors in illness is not limited to psychosomatic medicine. Interest in an understanding of the individual's personality and reaction to his illness is steadily increasing in the whole field of medicine, especially when rehabilitation of the handicapped person is concerned.

The investigation of the inter-relationship between physical, emotional, and social aspects of illness has, in most instances, been based on study of individual cases from which generalizations have been drawn. Each patient

represents a clinical picture which varies from the "typical" and requires a differential approach in study and treatment. To make use of general knowledge without appropriate consideration of individual differences is acknowledged as unsound. However, to individualize each patient to the extent that general knowledge is excluded is equally against the best interests of the patient and the person responsible for his care.

Variations in the physiological aspect of disease cover a wide range. Even more complex are the variations in personality and social adjustment of the patient with the disease. Questions such as the following might then appropriately be raised - is there a "norm" which can be used as a basis for comparing individual social diagnostic findings as there is in medicine as represented by the "typical" or "classical" case? Is there a valid over-all treatment regime which might be modified to suit the variations in social and emotional patterns of the individual case as there is in treatment of the physiological aspects of the illness?

Answers to some of these questions are being sought and found. The psychosomatists are reaching tentative conclusions regarding the emotional causes of illness. Study is also proceeding to determine the social and emotional consequences of illnesses which may not have emotional stress as a causative factor.

The history of medicine shows a consistent effort to

group symptoms into disease entities, and although disease may be broadly defined as a state of bodily malfunction, we usually think of it more specifically as "diabetes," "asthma," etc. Restoration of the sick person to health or to as near normal functioning as possible involves for him acceptance of the process of medical examination, evaluation (diagnosis), and treatment. He must also adjust to his symptoms and deal with his own and the public's attitudes towards his specific disease.

In one sense, it is this total situation which creates many of the patient's social and emotional problems. However, there are obviously some elements within disease and its treatment which are more threatening than others. Many of these elements or factors have been identified and considered in handling the ill person. That social dislocation results from confinement in bed, physical deformity or need for special diet is well known. There are many additional factors which have received equal attention. About others, we have only impressions gained as a result of helping many patients who break down under the resultant stress. If disease and its treatment could be analyzed in terms of such factors, more complete consideration of them might routinely be included in medical and social treatment.

This study will attempt such an analysis and propose a roster of factors which appear to be involved in creating social stress. As teaching and treatment are most frequently

done in terms of disease entities, an attempt will be made to determine whether these factors tend to present themselves in clusters which are characteristic of specific diseases. A further effort will be made to determine whether the factor may be considered as a source of stress in whatever context it may appear or whether its meaning is modified by the disease entity of which it is a part.

To proceed with this investigation four disease entities have been selected: diabetes mellitus, rheumatoid arthritis, epilepsy and rheumatic heart disease. These have been chosen because of their high incidence and because as chronic diseases, their duration can provide opportunity for social and emotional problems to become apparent.

This part of the total study will be concerned only with the disease entity of rheumatic heart disease, as the segment concerning rheumatoid arthritis has already been completed and those concerning diabetes and epilepsy are in progress. Twenty-five case studies will be made. Information will be gathered from individual interviews with the patients and in some instances with their families. This will be supplemented with facts obtained from available medical records.

This information will then be analyzed to determine whether the anticipated illness factors appear in the disease under study, whether they can be considered as being valid sources of stress, and what general types of problems

(consequences) they cause or aggravate. The resultant data will then be incorporated in the larger study concerned with the four chronic diseases mentioned above.

CHAPTER II

RHEUMATIC HEART DISEASE AND THE IDENTIFICATION OF THE FACTORS WHICH MAY INCREASE SOCIAL STRESS

It is estimated that about one million persons in the United States are suffering from rheumatic fever or the heart condition that results from it.[1] Although the majority of these people are able to lead normal active lives, many have to restrict their activities temporarily or permanently and some are complete invalids. It is difficult to estimate what this means in loss of earning power and in costs to the community for hosptial care and rehabilitation, but it probably amounts to millions of dollars annually. Furthermore, we do not need much imagination to realize what such long-term illness means to the individuals involved in terms of suffering, anxiety, and disruption of family and personal relationships.

Incidence

There has been a slight but definite decline in the incidence of rheumatic fever during the last three decades,[2] but it is still responsible for 90 percent of all the defective hearts in childhood, for 60 to 80 percent of the heart disease

in persons under the age of 40 and for one third of the cases of heart disease in subsequent decades.[3] Different surveys show that 1 to 4 percent of school children in the United States are affected by rheumatic heart disease,[4] but the incidence differs greatly from place to place. Although there are exceptions, experience has shown that rheumatic fever with rheumatic heart disease usually begins between the ages of 4 to 15 years with the peak incidence between the seventh and eighth years.[5] However, it also occurs among adults. As an example, there were 40,000 cases of rheumatic fever in the armed forces during World War II.[6]

Etiology

In spite of intensive medical research the cause of rheumatic fever is unknown. The great majority of both initial attacks and recurrences are preceded by a respiratory infection of hemolytic streptococci, but the nature of the relationship is still not determined. The latest opinion seems to be that the disease in some obscure way, is due to an allergic reaction in the connective tissues to Group A streptococci or their products. Most streptococcal infections, however, are not followed by rheumatic fever. When an epidemic can be closely checked as in military posts, it has been found that 90 to 97 percent of those who are infected do not develop rheumatic fever.[7]

Hereditary: There seems to be an hereditary factor in

rheumatic fever and rheumatic heart disease, as 32 to 50 percent of those affected by rheumatic fever, chorea or rheumatic heart disease have relatives with a history of similar troubles.[8] It is difficult, however, to separate the "pure" hereditary factor from environmental factors such as overcrowding, poor housing, and malnutrition which may increase the risk of infection and make the individual more susceptible to the disease.

Climate: To what degree climate influences the occurrence of rheumatic fever is not yet established, although there seems to be a general agreement that high altitudes may increase the rate. A cold and northern climate has usually been considered a factor in rheumatic fever, but in one of the latest works describing the disease, various studies are reported which show a considerable disagreement on this point.[9] However, the incidence of the disease seems to be higher in the colder and wetter months of the year.

Sex: Rheumatic fever occurs in both sexes. The incidence is usually more frequent among females, in the ratio of about 4 to 3 or 5 to 4.[10] One explanation to this may be that women are more exposed to streptococcal infections by their children and are less likely to escape a crowded home situation.

Race: Rheumatic fever occurs in all civilized races and nationalities.

Environmental conditions: The incidence of rheumatic fever is much higher in the lower economic groups than among

the well-to-do. It is also more frequent in urban than in rural populations. This suggests that overcrowding, malnutrition, exposure to cold and wet weather without sufficient protection, fatigue, and unhealthy surroundings may contribute to the development of rheumatic fever.

Pathology

The principal damage done by rheumatic fever is to the mesenchymal tissues of the body (muscular and supporting structures, the heart and the blood vessels). Inflammatory processes cause redness, swelling and exudation and usually leave the affected tissue with scars. It has been said that "rheumatism is a disease that causes changes in all the connective tissues but takes a real bite out of the heart."[11] The reason for this is that "scarring" of joints does not necessarily interfere with their function more than a scar left by a burn or a cut on the skin interferes with the function of that organ. Nor is scarring of the blood vessels necessarily of serious consequence. The changes in the heart, on the other hand, may seriously interfere with its function; both the changes which occur in the active inflammatory stage and those which are a result of it.

Myocarditis: When the heart muscle itself (the myocardium) is affected by the inflammatory process, a dilatation of the heart may occur. The weakening and the stretching of the diseased muscle fibres may seriously interfere with the heart's

pumping force and lead to death in heart failure. When the acute myocarditis has subsided a permanent enlargement of the heart may be present and the scar tissue may interfere with its pumping force. In other cases a complete recovery occurs leaving little or no evidence of the acute reaction.

Pericarditis: An extensive inflammation in the tissues surrounding the heart (the pericardium) is usually present only in the severe cases of rheumatic fever and occurs most often in childhood. It may lead to an accumulation of fluid in the sac enveloping the heart and be a possible cause of heart failure in acute rheumatic fever. In healing, small or large scars may be left, but there is seldom damage enough to cause any signs or symptoms. Pericarditis is present in 10 to 20 percent of the cases with rheumatic fever.[12]

Endocarditis: Inflammation of the inner lining of the heart (the endocardium) may interfere with the proper opening and closing of the heart valves. The healing of the inflammatory process often results in fusion of the valve leaflets at their commisures (where they join each other), which causes a narrowing and sometimes almost complete closure of the valve. This obstruction is called stenosis. (Its effects on the function of the heart will be described later.) The inflammatory process in the valves may also lead to thickening and rigidity of the leaflets. They do not close as they should and a stream of blood flows back (regurgitates) through the opening which is left. Regurgitation can also be

caused by inflammatory changes and scarring in the chordae tendinae (the tendon-like fibers which play a role in the opening and closing of the valves). The valves failure to close properly is called insufficiency. Some degree of both stenosis and insufficiency is usually present in most cases of valvular rheumatic heart disease, but "pure" stenosis and "pure" insufficiency may also occur. Stenosis and insufficiency of the valves increase the work of the heart and limits its ability to maintain an adequate circulation. The scarring is permanent and tends to be progressive, particularly if the heart is affected by recurrent inflammatory processes. Complications such as subacute bacterial endocarditis may occur in such damaged hearts.

Effects of Valve Injury

A short description of the "mechanism" of the damaged heart may help to give a better understanding of cardiac symptoms.

The most common of the valve injuries caused by rheumatic fever is mitral stenosis. The mitral valve lies between the left auricle and the left ventricle. The blood which has just received a fresh supply of oxygen in the lungs flows from the left auricle through the mitral valve to the left ventricle to be pumped out in the aorta for distribution all over the body. If mitral stenosis is present, there then is an obstruction and retardation of the flow of blood from the

left auricle to the left ventricle. This causes increased pressure in the left auricle which dilates to accommodate the excess blood and hypertrophies (thickens) to cope with the greater resistance. The blood pressure also rises in the lungs. The right ventricle, therefore, has to work against greater resistance and eventually it too dilates and hypertrophies. The increased pressure may even cause dilation and hypertrophy in the right auricle. Mitral stenosis may not be associated with any cardiac symptoms, but bronchial irritation, cough, and dysphagia (difficulty in swallowing) may develop due to enlargement of the heart. Mitral stenosis may also cause other cardiac symptoms such as dyspnea, orthopnea (difficulty in breathing), palpitation (abnormal strong beating of the heart), arrhytmia, edema, and hemoptysis (spitting of blood).

A dilation and hypertrophy of the left auricle may also occur when mitral insufficiency is present. Regurgitation from the left ventricle makes the work harder for the left auricle, as it has to pump a larger amount of blood back to the left ventricle. The left ventricle, which has to propel a sufficient amount of blood through aorta to the body, eventually tries to compensate with hypertrophy for the loss of efficiency caused by the regurgitation. A mitral insufficiency of moderate degree may not cause any cardiac symptoms. If the insufficiency is severe, or the change in the leaflets and the chordae tendinae gets progressively worse,

left sided cardiac failure (congestion in the lungs, cough, difficulty in breathing, and hemoptysis) may occur. The increased pressure in the pulmonary system may cause right ventricular and auricular enlargement and may eventually lead to right sided heart failure (edema, marked dilatation of the neck veins, enlargement of the liver, etc.).

An obstruction of the valve between the left ventricle and aorta, aortic stenosis, may cause hypertrophy of the left ventricle which has to work against increased pressure. It may cause no symptoms at all, although vertigo (dizziness), attacks of syncope (fainting because of interruption of the heart's action), and vague precordial pain may occur. If the obstruction is very narrow left sided heart failure may develop.

Aortic insufficiency causes dilatation and hypertrophy of the left ventricle because of its extra amount of work and the increased amount of blood caused by the regurgitation. Vertigo, syncope, dull precordial pain, and palpitation may occur although some patients have no symptoms.

The valve between the right auricle and the right ventricle, the triscuspid valve, is less often damaged by rheumatic fever than the mitral and the aortic valves. If lesions are present in the triscuspid valve they are almost always associated with severe mitral or aortic lesions or both. If the valve is obstructed it causes enlargement of the right auricle and since less blood flows into the right ventricle

the latter may atrophy. Right sided heart failure may develop.

The following tabulation will give an idea of the incidence of valvular deformity. It shows the findings of post mortem examinations in a series of 100 young patients under the age of 21 who died of rheumatic heart disease.[13]

Total cases	Mitral	Aortic	Triscuspid	Pulmonary	None
100	98	71	31	5	1

Symptoms of Rheumatic Fever

There is probably some degree of heart involvement in every case of rheumatic fever, but the heart itself only occasionally causes symptoms in the active phase of the disease. Although no symptoms are specific for rheumatic fever, there are some manifestations which frequently are present. Thus joint pains of a migratory nature usually occur in the typical case. Vague "growing pains" may also be a sign of rheumatic fever, especially if they are associated with fatigue, loss of weight, and general weakness. Fever is usually present during the early stage of the disease and may be the only sign of this disease. Unexplained, repeated nose bleeds occur in many cases. Chorea (St Vitus dance) which probably is the result of the rheumatic activity affecting the brain, may occasionally be the only sign of rheumatic fever. Usually there are other signs of rheumatic involvement, however. Skin rashes occur occasionally. Nodules under the

skin are associated with a more severe degree of this disease and when a prolonged form of the disease is present. Other non-specific signs are pallor, restlessness, lassitude, and failure to do well in school. Elevated sedimentation rate and an increased number of white bloodcells are also non-specific signs of rheumatic fever, as they are an indication of some inflammatory process in the body. X-ray and fluoroscopic examinations will show if there are changes in the shape and the size of the heart. An electrocardiogram also is a useful diagnostic procedure since there may be certain characteristic abnormalities in the recording, if the heart is involved in the inflammatory process.

A prominent feature of rheumatic fever is its tendency to be recurrent. A study done at the House of the Good Samaritan in Boston of 1000 patients with rheumatic fever showed that 70 percent of the patients suffered a recurrence of the active infection within 10 years of their first attack.[14] The greater the number of attacks, the greater is the risk of heart damage.

Course and Prognosis

The course of rheumatic fever is varied and unpredictable. It may start as an acute infection with high fever and pronounced symptoms, or it may be insidious and difficult to recognize. It may last for months and years showing itself only in loss of energy and appearance of ill health, or it may

lead to death from toxin or heart failure in a few weeks (although the latter rarely happens). It may lead to severe heart damage, or it may leave little or no scars and permit the individual to lead a perfectly normal and active life. The time it takes before a noticeable heart damage develops is also unpredictable. "Some patients acquire a high degree of mitral stenosis in five years whereas others fail to do so in fifty; the difference between the two usually is not apparent."[15] If the first attack of rheumatic fever occurs in an adult person, the attack is more apt to be acute and severe with extreme joint involvement but little or no heart disease. Heart disease is more likely to occur in children as their hearts are more vulnerable than those of adults. Thus studies show that rheumatic fever in children results in heart damage in 65 to 80 percent of the cases but only in 50 percent in older age groups.[16] It can generally be said that the heart involvement is apt to be more serious the earlier in life the attack of rheumatic fever occurs.

Although an acute attack of active rheumatic fever seldom leads to death, the resulting heart damage, if any, usually shortens the patient's life span. In a study of 1042 patients observed during a thirty year period, Wilson and Lubschez concluded that "an affected child has 4 chances out of 5 to survive childhood, 3 out of 4 to survive puberty, and then 19 chances out of 20 to survive early adult life, with an over-all chance of 1 out of 2 to survive the age of

40 years."[17] In this study the mean age of onset was 6.5 years and the average length of observation 14.8 years. The number of deaths was 226.

Dr. P. D. White makes the following statement:

> Death from heart failure or complicating infection commonly overtakes the victim of rheumatic heart disease in the second, fourth, or fifth decade of life, after many years, usually ten to twenty, of partial crippling and restriction of activity, and after a few years, usually two to five, of partial or complete invalidism. Sometimes, however, if the lesions are but slight and the subject is careful, fortunate, or both he may survive to old age and die a noncardiac death.[18]

Treatment

The treatment in the active stage of rheumatic fever is extremely important, as it may determine whether the patient will recover and be able to return to a normal, active life, or whether he will be the victim of a crippling heart disease. The cornerstone in the treatment is rest. During the acute infection complete bedrest is necessary. The patient needs all his energy and vitality to combat the infection, and it is important that the work of his heart is reduced to a minimum to prevent lasting heart damage. When the infection has subsided the activity can gradually be increased to the patient's normal capacity, if no residual heart damage is present. The length of the convalescent time depends on the severity of the disease and may last over several months if the infection has been severe.

Good nursing care and a diet high in vitamin C are also

important. Salicylates, such as aspirin, are used to alleviate the fever and the joint pains. It has traditionally been the opinion that this has been their only positive effect but in the Primer on the Rheumatic Diseases of 1953 it is stated that "contrary to traditional teaching, it appears possible that rheumatic inflammation in extra-articular areas such as the heart may also be suppressed with some benefit."[19] Therapy with hormones, such as ACTH and cortisone, seems to be valuable in active rheumatic fever, but further research is needed to establish their effectiveness. When the heart is severely involved by the acute infection, digitalis (a heart stimulant), diuretics (drugs which increase fluid elimination through the kidneys), and oxygen may be necessary.

The risk of recurrence of rheumatic fever has already been mentioned. Treatment directed towards prevention of a relapse is therefore extremely important in the inactive phase of the disease. If respiratory infections of streptococcic origin cannot be avoided, an early treatment of the infection with penicillin will greatly reduce the risk of a flareup of the rheumatic fever. Many streptococcal infections are prevented by a daily dose of penicillin given orally, which medication may be continued for several years. Regular checkups and careful medical supervision are important in order to detect early signs of recurring rheumatic infection or symptoms of permanent heart damage.

The preventive aspect is important also in the treatment

of chronic rheumatic heart disease. In other respects the treatment depends on the degree of heart damage and on how much this damage interferes with the work of the heart. The American Heart Association has adopted the following classification of patients with heart disease in four groups according to their functional capacity.

Class I — Patients with cardiac disease and no limitation of physical activity. Ordinary physical activity does not cause discomfort.

Class II — Patients with cardiac disease and slight limitation of physical activity. They are comfortable at rest but on ordinary physical exertion experience discomfort in the form of undue fatigue, palpitation, dyspnea or anginal pain.

Class III — Patients with cardiac disease and marked limitation of physical activity. They are comfortable at rest but the above symptoms are caused by less than ordinary activity.

Class IV — Patients with cardiac disease who are unable to carry on any physical activity without discomfort. Symptoms of cardiac insufficiency, or of the anginal syndrome, are present, even at rest.[20]

The patient's functional capacity determines the degree to which there must be restriction of physical activity and whether or not saltfree diet and medications are necessary. Often the patient's symptoms get progressively worse, and he has to spend shorter or longer periods in a hospital to be under close medical supervision and get the care he needs.

During the last few years, surgery of the heart has

been performed with good results in many cases of mitral stenosis. With steadily improving techniques of surgery an increased number of patients with valve injuries very likely will be helped to a higher functional capacity in the future.

Social and Emotional Effects of Rheumatic Heart Disease

The diagnosis of rheumatic fever with its implication of possible heart damage is threatening. The heart is viewed as our most vital organ, and heart disease is commonly associated with sudden death. There are still many misconceptions and superstitions among the general public concerning the outcome and treatment of heart disease and the patient often gets bewildering and contradictory advice from his relatives and friends. This may create anxiety or at least cause irritation. Oversolicitousness from family and friends with a constant focus on the patient's heart is also apt to cause anxiety in insecure individuals and may create a cardiac invalid of a person who might have been able to lead a fairly normal life if he had been helped to adjust realistically to his illness.

The hereditary aspect of rheumatic heart disease may cause guilt feelings in the parents of a child suffering by the disease, and possibly bitterness in the child. Adult patients with rheumatic heart disease may be afraid that they will transmit the disease to their offspring and be reluctant to marry or to have children.

If recurrent attacks of rheumatic fever have occurred, the family may feel that the recurrence is caused by neglect on their part, or they may blame the patient for not having taken the necessary precautions. These feelings of guilt and hostility are more apt to develop in families where the balance in the interpersonal relationships has already been precarious.

As mentioned earlier rest and restricted activity are the main features in the treatment of rheumatic fever and rheumatic heart disease. This requires a certain amount of passivity on the part of the patient. One individual may react with rebellion to this, refuse to co-operate with his doctor, deny his limitations, and very likely resume normal activity earlier than desired. Another patient may willingly accept the dependency and use his heart disease as an excuse for withdrawal from all kinds of competitive endeavor. The extra attention and the advantages obtained during the active stage of the disease may be too satisfying for some individuals and make them reluctant to return to a more normal active life again.

The long period of bedrest is certainly hard for children, especially during the convalescent period when they do not feel ill. A child has difficulty in understanding why rest and restrictions are necessary and may easily interpret them as punishment. Likewise, if a child has to be cared for in a hospital or in a convalescent home, the separation from his parents may be felt as punishment and rejection. The long

period of bedrest and convalescence will also interfere with the child's formal education. His classmates and friends will pass to the next grade and leave him behind. If arrangements for a home teacher cannot be made, readjustment to his peer group may be most difficult.

The need for passivity and dependency may be extremely hard to accept for the adolescent patient who is in the midst of his struggle for independence and often has difficulty in accepting authority. The doctor has to enlist the adolescent's co-operation and leave as much responsibility as possible to the young patient to avoid rebellion and contrary behavior. The chronic aspect of the heart involvement may also be very difficult to accept for a young person. He may have to change his professional and vocational plans and feel that he will never be able to develop his individual capacity or to realize his ambitions. Adolescent girls are often concerned about a future marriage and their ability to have children.

Vocational problems may also be prominent in the adult male patient. The symptoms of the heart disease may not occur until he is middle aged. He cannot continue the strenuous work he previously has done, he may be unable to find suitable light work, or he may gradually become too ill to do any work at all. Financial worry, feelings of unworthiness, because of his inability to support his family, and resentment of dependency on the community will often cause a depressive and despondent outlook on life in this kind of patient.

Feelings of unworthiness may also plague the adult female patient, especially if she is married and has children. Her inability to properly do her housework and take care of her children may create feelings of guilt. The fact that heart disease often does not evidence itself externally, may cause lack of understanding of her need for restricted activity from family, friends and neighbors, which will make the patient's situation still more difficult. Limitation of the size of the family may be recommended by the patient's doctor. Thus the question of birth control may be a serious problem.

Rest periods, daily medication, and dietary restrictions are disliked by many patients because they are a constant reminder of the disease. Children and adolescents are especially apt to resent anything which makes them conspicuous and "different" from others.

As previously mentioned, rheumatic heart disease in some cases is static and the patient may die a noncardiac death. But the disease often becomes progressively worse, gradually or in sudden attacks. It is not always easy "to learn to live with heart disease," and a constant fear of death may be present in many patients. This will decrease the patient's ability to enjoy his family and the activities in which he is still able to participate.

In this discussion stress situations caused by factors in rheumatic heart disease have been briefly reviewed. A complete list of the factors which will be considered in this

study is as follows:

I. Public attitudes

1. Anxiety

II. Etiology

1. Hereditary tendency
2. Neglect in care

III. Symptomatology

1. Chronicity
2. Unpredictability of increase in symptoms
3. Progressive severity
4. Lack of external evidence of disease
5. Persistent pain
6. Awareness of visceral dysfunction
7. Low activity tolerance

IV. Treatment

1. Need for consistent medical supervision
2. Need for regular medication
3. Self-determination concerning medication and treatment
4. Hospitalization
5. Required inactivity
6. Dietary limitations
7. Smoking limitations

Footnotes for Chapter II

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16. Ibid., p. 316.
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20. Traut, op. cit., p. 446.

CHAPTER III

METHODOLOGY

As previously stated this study is a segment of a larger project concerning the social and emotional consequences of four chronic diseases, rheumatoid arthritis, diabetes mellitus, epilepsy, and rheumatic heart disease. It was started in 1953 by the staff of the Medical Social Service Department at the University of Wisconsin Hospitals. Each component of the project is based on twenty-five cases. Although some minor variations may exist, an attempt has been made to obtain as much conformity as possible in the four segments to facilitate a comparison of the findings and the conclusions when they are all completed.

The responsibility for gathering information has been shared between the student and staff members of the Medical Social Service Department who in this part of the study have interviewed ten of the twenty-five patients. The reason for their participation has been to determine if there are obvious discrepancies between the quantity and quality of the material elicited by a professional social worker and that obtained by the student.

The criteria established for the suitability of the cases

to be included in this study were as follows: (1) that the patient be between the age of three and sixty-five; (2) that the diagnosis be clearly established as rheumatic heart disease; (3) that the patient's illness not be complicated by another disease which would interfere with our evaluation of the effects of the primary illness under study, and (4) that the patient should be neither psychotic nor feeble-minded. In several instances it was necessary to reject cases diagnosed as rheumatic heart disease because they did not fit into all of these four categories. For example many patients were found to have a diagnosis of some other disease as well as rheumatic heart disease. Two cases of subacute bacterial endocarditis are, however, included in the study, as this complication is very common in cases of rheumatic heart disease. These patients furthermore had lived with their rheumatic heart disease for a number of years prior to development of the second type of infection. A few cases of a mild neurosis were also included, as in these the neurotic condition was considered to be related to the patient's reactions to his heart disease.

To obtain the twenty-five cases a weekly case survey was made on two men's and two women's medical services. Because of the limited number of suitable cases these surveys continued from the middle of July 1954 to the middle of November 1954 before the first fifteen cases were found. The additional ten cases were interviewed by medical social

service staff members during the period November 1954 to March 1955 and were selected on a similar basis. In order to include some children in the study the Bureau for Handicapped Children was contacted. Sixteen cases of children who are under observation for inactive rheumatic fever were selected and the medical records were reviewed. However, only one case was considered to be appropriate for the study and included.

As previously mentioned one difficulty in the screening of the cases was that many patients did not fit into the criteria for the study. Another problem was that even though they may have done so, the seriousness of their medical condition in some instances made them unavailable for interviews. Although a few patients could be interviewed at a later date, at least two tentatively selected patients succumbed to the disease before they could be seen. After selection another four patients were discharged before an interview could be arranged.

Because of the nature of the disease with the possibility that the patient's condition might be aggravated by discussion of painful emotional material and by fatigue caused by the interview itself, the ward physician was always consulted before any patient was contacted. The nature of the interview was discussed with him, and his opinion was secured concerning the patient's current condition and how long an interview the patient would be able to tolerate without risk.

As the majority of the patients at the University

Hospitals come from various parts of the state and the length of their stay in the hospital is usually difficult to predict it was decided that a one-interview contact would be made. However, in a few instances the study contact had to be divided so as to be covered during shorter interview periods to avoid overtiring the patient.

Before the patient was seen the medical record was reviewed and information about the onset, severity, and symptoms of his heart condition was recorded. Additional material in the medical record such as social data and information concerning the patient's emotional stability were also helpful.

Each selected patient was informed concerning the nature of the study with emphasis on the fact that his participation might be helpful to future patients, as the study was being done in order to give those persons working in the medical field a better understanding of rheumatic heart disease and its effects on the individual patient. The patient was told that his doctor had approved the contact with him, which seemed helpful in cases where the patient was anxious about his condition and afraid that an interview would be too tiring. Any initial hesitancy to participate in the study was also diminished when the patient was assured that he could terminate the interview whenever he wished. It was furthermore explained to the patient that although we would greatly appreciate his participation this would be completely voluntary on his part. The patient was assured that the information he gave would be

confidential and recorded anonymously. In the majority of the cases patients were immediately willing to participate and many seemed to get considerable satisfaction from the opportunity to discuss their successes as well as their problems. Only one patient decided not to participate and his refusal seemed due to reluctance which was reinforced by several interruptions for hospital procedures before the study could get well started.

Whenever possible the interviews were conducted with privacy. In the majority of the cases, however, the interviews had to be conducted at the patient's bedside due to his medical condition. Although attempts were made to secure as much privacy as possible by placing screens around the patient's bed, it is felt that in some instances more pertinent material would have been obtained if a more confidential situation could have been arranged.

Since much of the information desired would be of a subjective and introspective nature, it had been decided that the case study method should be used. Neither schedules nor questionnaires were used but a list of the factors mentioned in Chapter II and their anticipated social and emotional consequences served as an interview guide. Although the interview was focused on these factors an attempt was made to avoid direct questions but to let the patient tell his story as much as possible in his own words.

The four areas, public attitudes, etiology, symptomatology,

and treatment were discussed with each patient. In some instances it was difficult to obtain full information because of the brevity of time elapsed since the onset of the disease and also uncertainty concerning medical recommendations for the future.

The ten case studies done by the staff members were added to the fifteen done by the student and evaluated as a group. Summaries of the twenty-five interviews will be found in the following chapter. They will be of a descriptive nature and contain pertinent information about each patient included in the study. Analysis and further discussion of the data obtained and some additional information about the individual patient's responses in the interview will be found in Chapter V under the headings of the factors listed in the previous chapter.

CHAPTER IV

CASE PRESENTATIONS

Case #1 - Mr. G.

Age: 57 Church: Catholic

Sex: Male Usual Occupation: Construction carpenter

Onset and Severity

This patient had an attack of rheumatic fever at the age of 25. Dyspnea on exertion was the only symptom until 1950 when he had a severe heart attack and had to quit work. Since that time he has been on regular medication. His condition is diagnosed as mitral stenosis and insufficiency, aortic stenosis and insufficiency with calcification of the pericardium. The patient is classed as having functional capacity IV which means that he is unable to carry on any physical activity without discomfort and experiences symptoms of cardiac insufficiency even at rest.

Emotional Stability

Mr. G. gave the impression of being tense and anxious. Thus he was first reluctant to participate in the study as he feared that the interview might aggravate his condition.

Although he stated that he tried to be "cheerful and happy" he seemed to be quite depressed over his inability to work. Otherwise he appeared to be a stable individual.

Case Summary

This 57 year old white male had an attack of rheumatic fever when he was in the Army in 1925. He was told that his heart was damaged and that he had to be careful. However, he was able to "go around almost like anybody else" until 1950 when he had to stop working on doctor's recommendation. Mr. G. believes that his general condition would have been better if he had been permitted to continue working to some extent at that time.

Mr. G. has been a construction carpenter most of his life. After having graduated from 8th grade he took a one year business course and worked for some years with different construction companies. He has owned his own business since 1930. He sold this in 1950 and moved out to a farm which he had owned for some time. The land is now rented to a neighbor and Mr. G.'s only "work" consists in buying and selling property on a very small scale, as he "cannot go out and meet people."

This patient has been married for 14 years and has a 5 year old daughter. The marriage seems to be happy and he describes his wife as very understanding. Although their financial situation is fairly good, Mr. G. feels that he has deprived his wife of pleasure from recreation and social

contacts as they cannot go out together any longer. The "biggest hinderance" caused by his disease is, however, that he is unable to work. He would like to have "some kind of job," even if he did not get paid very much, as "there is nothing like work."

Mr. G. has been told by many doctors that there is very little hope that he will be "cured." However, he has difficulty in accepting this statement and follows with great interest the development of new techniques in heart surgery, as he hopes that he one day will be helped through surgery. In fact, Mr. G. was very disappointed that surgery was not performed during his present hospitalization.

Case #2 - Mr. E.

Age: 38 Church: Protestant

Sex: Male Usual Occupation: Truck driver

Onset and Severity

This patient was first told about a heart murmur in 1934 and again in 1942 when he was rejected from the Army. He had no symptoms at that time but began to develop nervousness, shortness of breath and chest pains around 1945. He now has a strong cardiac neurosis superimposed on an organic basis, e.g. cardiomegally, mitral insufficiency and auricular

fibrillation. Functional capacity I. The patient has been unable to work since 1952.

Emotional Stability

Since he was rejected from the Army this patient has been preoccupied with his heart, has had nervous spells, difficulty when in crowds, and has occasionally resorted to heavy drinking "to calm his nerves." Fear of cardiac death caused a "nervous break-down" in 1948 and is probably still an element in the patient's inability to work.

Case Summary

Mr. E. was first told about his heart in 1934 when he was examined for work at a C.C. camp. He was accepted, however, and never thought much of his condition until 1942 when he was rejected from the Army because of a "murmur." After that he gradually started to have dizzy and fainting spells and an increasing nervousness which culminated in 1948. When he was told by his family doctor to rest 24 hours a day after a respiratory infection, Mr. E. feared that he would "drop dead any minute" and "got a nervous break-down from worrying about going to die." He was, however, told by another doctor that his heart damage was not severe and was advised to start working again. It was difficult to find any light work in the community where Mr. E. lived and he did various odd jobs until 1950 when he bought a truck which he operated until 1952 at which time his doctor told him to stop working completely

as loading and carrying of heavy goods was included in the work.

Mr. E. has been married since 1944 and has two little daughters. He and his family have lived on public assistance during the last three years. Mr. E. resents this as he believes that "people look down" on him and have difficulty in understanding that he cannot work and support his family. He is also discouraged when he thinks of the future of his two daughters, as he will be unable to give them a good education if his heart does not improve. Mr. E. himself has an 8th grade education.

Mr. E. also resents dependency on his relatives who lend him a car for transportation to his doctor and for recreation.

Case #3 - Mrs. M.

Age: 40 Church: Methodist

Sex: Female Usual Occupation: Housewife (Cashier)

Onset and Severity

This patient had rheumatic fever at the age of 9. She did not participate in competitive sports but was able to lead a fairly normal life until 1953 when she had a severe

heart attack. She now has mitral stenosis and aortic insufficiency, cardiomegaly, and auricular fibrillation. She suffers from shortness of breath, occasional cyanosis, palpitation and arrythmia. During the last year she has been hospitalized five times. Mrs. M. is classed as having functional capacity III which means that she is comfortable at rest but suffers from cardiac symptoms after less than ordinary activity, so a marked limitation of physical activity is necessary.

Emotional Stability

Although this patient apparently has successfully combined housework and work outside of her home, she now seems to be very dependent on her husband. She gets nervous and excited easily and is very concerned about her heart condition. She constantly fears an attack and seems to be preoccupied with her symptoms.

Case Summary

This 40 year old white woman was married at 19 years of age and has three children, one son 19 years old, and two daughters 17 and 8. Her husband is a foreman in a stock room. The family economy has been good, but medical expenses have lately been a heavy financial burden and have caused strain on the marital relationship.

Until her heart attack in September 1953, Mrs. M. worked as a cashier in a theater. She has also earlier been

employed as a clerk and a time keeper. Mrs. M. liked to work outside her home and regrets that she had to stop working. However, she is more concerned about her inability to do her housework, which has to be shared between the other members of the family. Mrs. M. also feels guilty that her condition has made her unable to give her children the companionship they have needed and that her frequent hospitalizations have caused dislocation of her family. She is especially concerned about her eldest daughter who has gotten into serious sexual difficulties.

Mrs. M. never goes out unless she is accompanied by her husband, as she is "afraid to get sick or something." She has a telephone at her bedside, and her husband calls her twice a day when he is at work.

Mrs. M. had difficulty in believing that she "never would be real peppy again" when she first was told that she had to stop working. She still finds it difficult to accept the chronic aspect of her disease and hopes that she will be helped by "surgery or some new kind of medicine."

Case #4 - Mrs. D.

Age: 21 Church: Catholic

Sex: Female Usual Occupation: Housewife

Onset and Severity

This patient had rheumatic fever at 13 years of age. She was then relatively well until May 1954 when, during her third pregnancy, she developed subacute bacterial endocarditis. The rheumatic heart damage includes mitral and aortic involvement and cardiomegaly. Functional capacity III.

Emotional Stability

Mrs. D. seemed to be a calm and well-balanced person. She showed very little feeling in connection with her illness but expressed a fatalistic faith in God.

Case Summary

This 21 year old housewife has been under medical supervision since her attack of rheumatic fever at the age of 13. She spent 6 months in bed at that time and had to restrict her activities during her high school days, which made her unable to participate in certain classes and prevented her from learning to dance, which she considers a big handicap.

Before her marriage at the age of 18 Mrs. D. went to her family doctor to get his opinion about her ability to have children as both she and her future husband wanted "a great big family." Mrs. D. was informed about the risk involved and warned that she should have no more than one or at most two children on account of her heart damage. She had two children without heart complications and believed that her

doctor had been mistaken about the seriousness of her condition. However, during her third pregnancy she developed subacute bacterial endocarditis and has been unable to do her housework since May 1954. The child died after a few days probably due to a Rh-negative factor.

Mrs. D. still wants to have more children and has not considered any form of birth control as she believes that "it is up to the Lord" to decide if she shall have more children or not. She is, however, worried about her two small children and wonders what will happen to them if she dies.

Since May 1954 Mrs. D.'s mother has helped her to take care of the children and with most of her housework. Mrs. D. feels somewhat guilty over this as her mother has had to neglect her own household and her social responsibilities.

Mrs. D. is married to a farmer. Their income is limited and the costs for medical supervision has been felt as a heavy burden. Mrs. D. states that "as we cannot afford any more hospital bills, the state takes care of it this time."

Case #5 - Mrs. B.

Age: 52 Church: Catholic

Sex: Female Usual Occupation: Housewife

Onset and Severity

This patient had frequent sore throats until she was 18 years old at which time she contracted rheumatic fever. A tonsillectomy was performed and the patient was well until May 1954 when she had a heart attack. Her condition was diagnosed as rheumatic heart disease with cardiac hypertrophy and auricular fibrillation. She is classed as having functional capacity II, which means that she is comfortable at rest but experiences discomfort on ordinary physical exertion, so slight limitation of physical activity is necessary.

Emotional Stability

Mrs. B. describes herself as a person who has "always been kind of nervous." Her nervousness has become worse gradually since her heart attack in May 1954. A second attack in June may have been due to hyperventilation on an emotional basis.

Case Summary

This 52 year old white woman has experienced her heart symptoms, dyspnea, palpitation, tachycardia, only during a few months and has not yet accepted the necessity of a less active life in the future. At present a skin rash which probably is due to digitalis medication seems to preoccupy the patient more than her heart condition.

Mrs. B. was born and raised on a farm and spent the first 17 years of her married life operating a farm with her

husband. They have no children.

During the last 8 years Mrs. B. has accompanied her husband who left farming to be an itinerant electrician. When the work in one place was finished they, with eight other families, moved to another place. They all lived in house trailers and were "just like a big family." Since her heart attack in May Mrs. B. has had to stay on the farm and her husband has stayed with her. Although her husband never complains, Mrs. B. knows that he wants to go back to his work as soon as possible and she feels guilty that her illness has prevented him from doing so. She therefore hopes that she herself soon will be able to go back to the travelling life which she prefers. She does not see need for medical supervision as preventing this as "any doctor is good enough if something happens."

Case #6 - Miss A.

Age: 47 Church: Protestant

Sex: Female Usual Occupation: Cashier

Onset and Severity

This patient had rheumatic fever at the age of 5 and again at 15 and 23. Rheumatic heart disease was diagnosed in 1942. However, the patient was fairly well until last year

when she developed fatigue and shortness of breath. She was hospitalized in August 1954 for increasing dyspnea, cough, and ankle edema. She now has cardiomegaly and mitral regurgitation. Functional capacity III.

Emotional Stability

This patient apparently felt that she had always "carried too heavy a burden" and expressed bitterness against her family for lack of understanding and support. However, she seemed to be an emotionally stable person.

Case Summary

This 47 year old white woman was raised in a family of eight children where "nobody paid much attention to her health." Miss A. apparently feels that her many brothers and sisters not only deprived her of the care she needed as a child but that they also, during later years, have showed a complete lack of understanding of her heart condition. Thus they have left the responsibility for the support and the care of their elderly parents to the patient, although they are all financially well off. Miss A. had been working full time as a cashier until her present hospitalization and feels that she has "carried too heavy a load both at work and at home." She hopes that her present hospitalization will make people realize this.

Miss A. is sure that she would have been married now if she had not had her heart disease. She was to become

engaged, but her boy friend "quit" when he learned about her heart condition. Her life would also have been different in other respects. She has not been able to make any new friends lately as she has been too tired to go out and she has hardly had enough energy to keep in contact with her old friends. She does not want to tell people about her heart disease if she can avoid it and instead gives some other excuse when she is too tired to accept invitations.

Case #7 - Mary

Age: 11 Church: Protestant

Sex: Female Usual Occupation: Grade school student

Onset and Severity

A heart murmur was diagnosed during a pre-school examination in 1948. The patient had an attack of active rheumatic fever in February 1949. She now attends regular school, but must still avoid competitive activities and take regular rest periods. She has slight mitral regurgitation and slight cardiac enlargement, functional capacity I.

Emotional Stability

This patient seems to be an intelligent and emotionally well balanced child who has made a good adjustment to her

cardiac condition. In her mother's words: "She is a happy little character in spite of everything."

The parents seem to have accepted the situation realistically without undue anxiety or over protection.

Case Summary

This patient had rheumatic fever at 6 years of age. She was on complete bedrest at home for 6 months followed by a convalescent period of 10 months in a convalescent home. Her mother felt that the responsibility for the patient's care was heavy and she was greatly relieved when it was taken over by others. She believes that the stay at the convalescent home was a valuable experience for her daughter as the girl came in contact with other children with the same condition and learned that "there were people who were worse off than she." The girl did not seem to be disturbed by the separation from her parents, but "adjusted beautifully." Mary herself does not remember much but recalls that she wanted her parents to come and visit her more often.

Mary still has to avoid competitive activities. Although she states that she would like to be "in track" she seems to compensate for her limitations by being "superior" in what she can do. She is accepted by her classmates and gets along well with other children. However, the need for rest periods after school is a problem, as she cannot participate in after-school activities as much as she would like to do.

Mary has one 6 year old brother. He has also had rheumatic fever but without lasting heart damage. The parents first felt that life had given them a "dirty blow" when both their children got rheumatic fever. The were reluctant to have more children but now feel that they would like to have another baby as their family doctor has informed them that the risk that another child will get rheumatic fever is relatively small.

Case #8 - Mrs. W.

Age: 31 Church: Lutheran

Sex: Female Usual Occupation: Housewife

Onset and Severity

This patient had her first heart attack at 13 years of age. She was fairly well until 1947 when she experienced recurrence of symptoms. Since May 1953 she has become gradually worse and has been unable to work since September 1953. Since May 1954 she has noticed increasing swelling of her abdomen and legs and progressive dyspnea and ortopnea. She has been taking digitalis regularly because of aortic and mitral stenosis, mitral insufficiency and cardiomegaly. Functional capacity IV.

Emotional Stability

This patient has apparently been fairly well balanced until lately when her symptoms became worse. She now gives an impression of being tense and apprehensive, very depressed and almost overwhelmed by her difficulties. A diagnosis of possible anxiety tension state is established in addition to that of rheumatic heart disease.

Case Summary

This 31 year old white housewife has a high school education and two years of college. She taught school for two years before her marriage to a farmer in 1945. They worked hard to improve the farm they had bought but their barn was destroyed by a tornado just when they had gotten it remodeled and had to start all over again. Mrs. W. believes that she probably worked too hard at that time, which might have contributed to the recurrence of her symptoms.

Mrs. W. is very worried over their financial situation as they still owe 500 dollars for the farm and the heavy expenses for her medical care have interfered with the payments on the farm. She has been unable to do her housework since January 1953 and has had to hire help which also has meant an extra expense. Mrs. W. is very discouraged over her inability to work, especially as she feels that she is needed on the farm. Her feelings of unworthiness are increased by lack of understanding on the part of her mother-in-law who

cannot understand the need for restricted activity and calls the patient's illness all "imagination." Her husband is understanding, but Mrs. W. tries not to bother him with her troubles as he has problems enough with the farm.

The separation from her 6 year old daughter has also been a problem. Last time Mrs. W. was hospitalized the girl refused to eat until she was brought to her mother in the hospital. However, Mrs. W. hopes that the girl will stand the separation better this time as she is in school most of the day.

Case #9 - Mr. M.

Age: 48 Church: Presbyterian

Sex: Male Usual Occupation: Owner of locker business

Onset and Severity

This patient had rheumatic fever at the age of 15 or 16. Since 1942 he has had numerous episodes of cough and hemoptysis increasing in severity and frequency. A valvulotomy was performed in July 1954 without subjective improvement. The patient has taken digitalis regularly because of mitral regurgitation and congestive heart failure. He has been hospitalized five times since January 1954. Functional capacity IV.

Emotional Stability

This patient's defensive and hostile attitude is probably due to discouragement with his condition and disappointment with the results of surgery. He has always been a hard-working man and his incapacity "just burns (him) up." He expressed a strong anxiety concerning the unpredictability of his condition; "a horror all the time that something will happen." However, there is evidence that he has been an emotionally stable individual prior to the illness.

Case Summary

Since graduation from high school and three years of teacher's training this 48 year old white male has spent most of his life in various kinds of business. He owns a locker business which now is operated by his wife and hired help as the patient has been told by his doctor to "forget about his business." Mr. M. resents this but realizes the necessity of restricted activity as his condition has been progressively worse during the last year.

Mr. M. believes that his heart condition might have been aggravated by too hard work in his business and by neglect of consistent medical supervision. However, he is convinced that his present poor condition is due to the valvulotomy which was performed in July 1954. He deeply regrets that he let his doctor "persuade" him to undergo surgery and states that he would have preferred to live the three years predicted

as his life expectancy in only fairly good shape instead of "being tied down like this."

For the last few months Mr. M. has been unable to go down town and has felt himself to be fairly isolated. He and his wife have lived in their present community only four years and have always worked too hard to find time to make many friends. They have no children. Mr. M. has also been unable to spend time in his workshop this summer as he could not climb stairs. Idleness makes the patient feel irritated and frustrated.

Case #10 - Robert

Age: 17 Church: Protestant

Sex: Male Usual Occupation: none

Onset and Severity

This patient had his first episode of swollen and painful joints at the age of 8. Subsequently he has had recurrent joint symptomatology and frequent sore throats, although he has had no medical care from the time of the initial illness until two years ago. He now has mitral stenosis with regurgitation and tachycardia. Functional capacity II.

Emotional Stability

This adolescent boy seemed depressed and unhappy. His

outlook on the future was very dark as he did not expect to be any better. He resented being different from other boys and stated that "it is not fair that some people are so healthy when you are sick all the time." His present complaints of shortness of breath and weakness are in all probability secondary to an anxiety reaction.

Case Summary

This 17 year old white boy is the eighth of nine children. His parents were divorced shortly before his first attack of rheumatic fever at the age of 8. His mother remarried shortly afterwards. His stepfather never had any understanding of Robert's disease and refused to pay for medical care. Thus his rheumatic heart disease was diagnosed first in 1953 at which time the patient was kept on bedrest at home for 6 weeks as his stepfather refused to pay for the hospitalization advised by the local doctor.

Robert stated that he has felt tired almost all his life. He quit school in the 9th grade as he could not keep up with either his school work or with his classmates physically. His tiredness and lack of energy made him feel "different" from the other boys. They teased him for being a "sissy" which the patient resented but as his condition was not diagnosed he did not know what to tell them.

Robert has been unable to take a job and lives with his mother and a younger sister. Although he resents being

financially dependent on his mother he has little motivation to try to find a job, as he does not believe that he will ever be any better. They live in a small town where there are very few boys of Robert's age which makes him feel isolated. Fishing is almost his only form of recreation.

The mother who divorced Robert's stepfather one year ago apparently feels guilty about the neglect in medical care. Robert stated that she "felt terrible" when his heart condition was diagnosed. She is anxious and overprotective and he is "hardly allowed to do anything."

Case #11 - Miss R.

Age: 19 Church: Catholic

Sex: Female Usual Occupation: High school student

Onset and Severity

This patient had scarlet fever in 1946 followed by swelling of ankles. In July 1947 she had an acute attack of rheumatic fever and subsequently spent almost four and a half years in bed or on heavily restricted activity. She went back to school in 1952 and has done well up to this summer when her symptoms recurred. She has been on digitalis medication because of mitral regurgitation and stenosis and

cardiomegaly. Functional capacity III. The patient has spent the last few months in the hospital.

Emotional Stability

This pleasant girl who appears to be younger than her age has apparently been well adjusted to her heart condition in the past. However, she is now discouraged over the relapse and the uncertainty regarding future medical recommendations. She finds it difficult to be physically and financially dependent on her family and looks forward to the day when she will be able to support herself.

Case Summary

This 19 year old white girl has been raised in a large family. She is the third oldest of seven siblings and has in addition three stepbrothers and one half-brother, as her father remarried 6 years ago shortly after her mother's death. Her father owns a medium-sized farm and the family income is limited.

The patient was not able to keep up with her school work during her long period of bedrest and is about three years older than her classmates. She has, however, finished her sophomore year and plans to continue her high school studies as soon as her condition permits her to do so. She is aware of the fact that she has to adjust her future plans according to her heart condition and has given up the idea of a career in journalism. Although she would have liked to get

a college education she realizes that it is impossible as she cannot expect any financial help from her family and she will not be strong enough to "work (her) way through."

Since the patient went back to school she has participated in various extra curriculum activities. She feels congenial with her three years younger classmates who have been very considerate and helpful and always have included her in their group. She states that "teenagers are pretty darn nice."

This girl "hates to be a burden on the family." Her stepmother apparently has little understanding for the need of restricted activity and has made the patient understand that a girl should be able to support herself at the age of 16. In order to do so Miss R. worked as a housemaid last summer but did not get adequate rest, ran out of digitalis and had to be hospitalized. She now feels responsible for her present hospitalization and regrets her "mistake."

Case #12 - Mrs. M.

Age: 43 Church: Catholic

Sex: Female Usual Occupation: Housewife

Onset and Severity

This patient was told that she had a "nervous heart"

when she was growing up. However, she had no symptoms until four years ago when she had a heart attack during her fourth pregnancy. Since then she has been bothered by occasional ankle edema, dyspnea, and palpitation. She is now hospitalized for cardiac decompensation due to mitral stenosis, slight cardiac enlargement and auricular fibrillation. Functional capacity IV.

Emotional Stability

This patient states that she has "always been a nervous kind of person." Her heart attack was a great shock to her and she has been worried about her heart ever since.

Case Summary

This 43 year old white woman is married and has four children between 16 and 4 years of age. Her husband is in charge of the concession stands at a carnival and travels each year from April to November. Mrs. M. and the children accompany him in a house trailer during the summer time. Mrs. M. also goes down South with her husband for six weeks each fall, at which time she leaves her children with her mother or with friends.

Since she had her heart attack four years ago, Mrs. M. has had to "slow down." This has been difficult as she has always been very active and has enjoyed her housework most of which is now done by her family and by hired help. Mrs. M. finds this depressing and is easily tempted to work a little

too much when she feels well which results in increase of symptoms and subsequent feelings of guilt.

Mrs. M. does not seem to think that it will be necessary to give up her traveling life yet. She has consulted "doctors on the road" whenever she has needed medicine or injections for her ankle edema. Saltfree diet has, however, been a problem as it has been difficult to get the food she can eat in restaurants.

Mrs. M. has decided to live "as normal as possible" in the future and direct her interest into occupations which will not strain her heart. She has accepted the idea of "living with (her) heart disease, even if it will be awfully hard."

Case #13 - Mrs. H.

Age: 41 Church: Methodist

Sex: Female Usual Occupation: Housewife

Onset and Severity

This patient had rheumatic fever at the age of 14 and five years later was told that her heart was damaged. Since then she has had intermittent palpitation and shortness of breath on exertion. Her symptoms have been progressively worse in recent years until now slightest exertion results in dyspnea. She has taken digitalis since May 1954 because of

cardiomegaly, mitral stenosis and auricular fibrillation. Functional capacity II.

Emotional Stability

According to her husband this patient has been high-strung and inclined to worry most of her life. She has, however, been a reasonable person and a good wife and mother. She had severe non-specific pains in 1947 which were diagnosed as a nervous breakdown. Her heart symptoms get worse when she is upset.

Case Summary

This 41 year old white woman has been married 20 years and has three children between 18 and 10 years of age. She was previously a school teacher. Her husband is employed at a garage. As his income is moderate, medical expenses have been a heavy burden and Mrs. H. is at present admitted as a public patient.

Mrs. H. has not been able to do much of her housework during the last year and has considerable feelings of guilt over her inability to do her "share." She has, however, found that her family is more concerned about her health than about the extra amount of work required of them, so she feels obligated to follow medical recommendations strictly and "not overdo, because they suffer when I am sick, and this is not fair."

Although Mrs. M. is somewhat bothered by her family's

overprotective attitude towards her illness, she is very happy and proud of her "wonderful family" and feels that her illness has brought them all "closer together."

Mrs. H. has had to restrict her social activities but does not feel herself isolated as her friends and relatives visit frequently.

Case #14 - Mr. G.

Age: 33 Church: Methodist

Sex: Male Usual Occupation: Farmer, factory worker

Onset and Severity

This patient had scarlet fever at the age of 16. Four years ago he expectorated large amounts of blood and was told that he had a "leakage" of his heart. However, he had no further symptoms until last summer (1954) when he developed cough, dyspnea, swelling of legs, and fatigue. These symptoms have been progressively worse and the patient is classed at present as having functional capacity IV. His condition is diagnosed as rheumatic heart disease with mitral stenosis and insufficiency.

Emotional Stability

This patient seemed to be a tense and apprehensive

individual who found the inactivity in the hospital very trying. However, there is evidence that he has been an emotionally stable individual prior to the illness.

Case Summary

This 33 year old white man was born and raised on a farm. He has an 8th grade education. Since his father's death four years ago, Mr. G. has been employed alternately as a farm hand and factory worker. He prefers the latter as the work is less strenuous and the hours are shorter. He plans to go back to factory work after his discharge from the hospital.

Mr. G. does not seem to realize the seriousness of his condition and believes that in a few months he will be completely symptom-free and able to resume his normal activity. He is, however, anxious to get more information about his disease from his doctors and seems to be willing to follow medical advice in the future. He blames his local doctor for not giving him adequate information about necessary precautions when his "heart leakage" was discovered four years ago.

During Mr. G.'s hospitalization his wife and his 6 months' old daughter are staying with her parents. They receive public assistance and Mr. G. is anxious to get back, find a job and be able to resume his responsibilities. He is lonesome for his wife and fears that the baby will forget him.

Mr. G. has always been a hard-working man and has not yet

accepted the fact that his heart condition is chronic and may require restricted activity in the future. He indicated that he would strongly resent economic dependency on his wife.

Case #15 - Mrs. S.

Age: 37 Church: Protestant

Sex: Female Usual Occupation: Housewife

Onset and Severity

This patient had pains in her hands and legs in 1952 and subsequently increasing symptoms of coughing, hemoptysis, shortness of breath and fatigue. A mitral valvulotomy was performed in September 1953 and the patient felt well until April 1954 when symptoms of cough and shortness of breath recurred on slight exertion and made her unable to work. Heart involvement includes cardiomegaly, mitral insufficiency, and pulmonary hypertension. Functional capacity III.

Emotional Stability

This patient seemed to be a calm and well-balanced individual who was somewhat depressed over her low physical capacity and the recurrence of her heart symptoms.

Case Summary

This 37 year old Indian woman is married and has seven

children between 17 and 5 years of age. Her last pregnancy this fall was interrupted and a hysterectomy was performed in November 1954, as another delivery was considered to be dangerous because of her heart. Mrs. S. is pleased with this as she has "kids enough to take care of as it is." She is disappointed that the improvement after her heart surgery did not last and is worried over a numbness in her right arm and right leg which has been present since the operation on her heart.

Mrs. S.'s husband has seasonal work at a cranberry packing house. He is usually unemployed during the winter and the family then receives public assistance. For the last two years they have lived in a remodeled garage but Mr. S. is building them a new home.

Since her heart surgery Mrs. S. has not been able to do much of her housework, which she finds "hard to take." Her husband and her children are, however, understanding and helpful and Mrs. S. states that she is happy as long as she can be with her family and supervise the work. She is concerned over the progressive severity of her heart symptoms and wonders what will happen to her children if she dies.

Although Mrs. S. has limited her activity and "not dared to do hardly anything" after her heart surgery, she has neglected keeping her salt-free diet during the last few months as she "just loves salt." She believes that this might have aggravated her symptoms and feels guilty over her neglect.

Case #16 - Mrs. H.

Age: 38 Church: Lutheran

Sex: Female Usual Occupation: Housewife

Onset and Severity

Although the doctors believe that this patient had rheumatic fever at the ages of 5, 17 and 27, it was not diagnosed as such until two years ago. Since then the patient has been hospitalized seven times and has been on medication because of mitral stenosis and insufficiency. Heart palpitation has been a prominent symptom. The functional capacity is III.

Emotional Stability

The patient has always been somewhat nervous and tense, but in general she seemed to get along well until cardiac symptoms, especially palpitation brought about excessive anxiety.

Case Summary

When Mrs. H. was 10 years of age, her mother died in childbirth. She was subsequently brought up by a grandmother. She left school at 14 and did housework until her marriage at 18. She considers that she and her husband had a fairly satisfactory relationship until he died of leukemia when she was 27. She then went to work in a machine shop and as a waitress until her second marriage at the age of 32. She

describes the current marriage as extremely happy and there is no evidence to the contrary. She has never become pregnant, but denies that this is due to anxiety related to conception or to efforts to prevent having children. Recently, a sister-in-law and her 6 year old daughter have moved into patient's home and share responsibilities for the housework. This is reported to be entirely satisfactory. There is some evidence that the husband and his mother may be overly anxious regarding the patient's heart condition. They are quite protective of her and she in turn has been reluctant to remain alone at all since the increase in her symptoms two years ago. Although she has had repeated hospitalizations and frequent visits to doctors, she denies that this has been a financial hardship, nor does she seem concerned about the enforced separation from her family. Her nervousness subsides almost immediately when she is in the hospital.

Case #17 - Mrs. K.

Age: 25 Church: Lutheran

Sex: Female Occupation: Housewife

Onset and Severity

Following many childhood illnesses, patient developed rheumatic fever at 16. Cardiac symptoms began during

pregnancy with first child at age 19, and have increased, especially during the past 1-1/2 years. She now has mitral stenosis, cardiomegaly, functional capacity is I. She is admitted to the hospital for cardiac surgery.

Emotional Stability

Patient presents long-standing patterns of withdrawn, insecure behavior, which have continued and have threatened the success of her marriage. She seems to be a rather compulsive person and complains of being unable to control her behavior, although she sees its adverse results.

Case Summary

This 25 year old married, white, Lutheran woman, with two children, age 6 and 2, has a history of long time neurotic patterns which she believes stem from lack of affection during her childhood. Her marriage was forced after an effort to abort the child, and this has been a source of friction and guilt. The patient's illness has drawn her husband closer temporarily, but she sees surgery as a solution in that it will either bring her death which will "free" her husband or improve her health to the point where she can work and contribute economically. Although patient's husband works full time, the cost of medical care has presented problems.

Although the patient is very critical of her parents, whom she felt neglected her medical care as a child, she has herself had difficulty in maintaining consistent medical

supervision due to poor relationship with doctors.

Case #18 - Mrs. B.

Age: 55 Church: Catholic

Sex: Female Usual Occupation: Housewife and telephone operator

Onset and Severity

This patient had "rheumatism" as a girl of 16, followed by tonsillectomy to prevent recurrence. Her heart disease was noted when she was about 38, but did not become severe until 9 years later, when following a dental extraction, she had an embolus. At that time she was hospitalized and was diagnosed as having mitral stenosis with regurgitation, fibrillation, and multiple emboli. Since then she has been doing fairly well on medication and with restricted activity. Functional capacity was III.

Emotional Stability

Patient reports that she has always been a nervous person, but has not had a "breakdown," even at the time of her husband's sudden death. She is very fearful of dying, but manages a fairly normal life.

Case Summary

This 55 year old widow has lived alone since her husband's death about three years ago. During his lifetime, he owned a barber shop and patient worked as a telephone operator until her heart disease became too incapacitating. Husband died suddenly of a coronary, leaving patient with severe financial problems so that her current income is small. During her marriage she was very active socially, and was "always on the go." She had no children, although no effort was made to prevent pregnancy. She now has a few dates and would like to remarry, but believes she cannot do so because of her disease. Insofar as possible, she conceals the fact that she has heart disease and when she must refuse invitations, does so on the basis of fatigue or some other excuse. She has developed a rather fatalistic attitude, saying that she has outlived her life expectancy and now goes on from day to day getting as much pleasure as she can. She follows medical recommendations carefully and is quite dependent on her present doctor. For instance, she continues to drive her car and expresses some concern if she would be required to stop this as it would prevent her coming to Madison for medical supervision.

Case #19 - Mrs. B.

Age: 29 Church: Assembly of God

Sex: Female Occupation: Housewife

Onset and Severity

This patient had rheumatic fever at the age of 6 and since the age of 18 has had progressive symptomatology. She is now diagnosed as having rheumatic heart disease with moderate cardiomegaly and mitral stenosis with regurgitation. She was on digitalis for 2-1/2 months last spring and functional capacity is II. She is admitted for cardiac surgery.

Emotional Stability

This patient appears to be an emotionally stable person, although she reports that she has headaches when she becomes nervous.

Case Summary

This young Mexican woman was born in Colorado but moved to Mexico with her family at the age of 5. A year later she contracted rheumatic fever. She completed fourth grade and married at the age of 14. Following the sudden death of her first child about two years later, she was persuaded to leave her husband and return to her father's home. She did not remain with him long, however, as the parents separated. She was pregnant and attempting to work in Mexico City when she became ill and her husband persuaded her to rejoin him and his family. There have been no further separations, but current problems arise from the husband's efforts to continue

supporting his mother and sister, whom he brought to this country soon after he and patient moved to the United States in 1944. Patient has two sisters-in-law living in the home. They are employed but do not contribute money or work to the household. There is, therefore, a direct conflict between American cultural patterns which patient would like to follow, and those of her husband and his family, he considering himself still the "head of the family," a position which he assumed when his father died, and which now seems to take precedence over his wife's needs.

As patient's health has deteriorated, she has grown more resentful of being imposed upon. She has a strong interest in and faith in her church and attributes everything, including her own survival to "God's will." Two children have died and another is awaiting surgery for a cardiac condition (congenital). The patient feels somewhat guilty that her own medical needs have been given precedence over those of her child. Friends and relatives have taken the children into their homes while she is in the hospital, and she appreciates this evidence of their concern. She hopes to have no more children and also that this crisis in her care, namely the undergoing of surgery, will persuade her husband to give her more protection from the impositions of his sisters. Housing is poor with few modern conveniences so that it is difficult for patient to restrict her activity unless she has some assistance in maintaining the home.

Case #20 - Mr. S.

Age: 49 Church: Lutheran

Sex: Male Occupation: Machinist

Onset and Severity

Patient had rheumatic fever in childhood, but the onset of cardiac symptoms began in 1945. For the past year he has led a sedentary life, takes digitalis regularly, eats six small meals a day, and has had several periods of hospitalization. The functional capacity is III.

Emotional Stability

This man appears to be an emotionally stable individual who has developed a great deal of anxiety around his heart condition. He also had nervous symptoms when his son was injured in a plane accident last fall.

Case Summary

This 49 year old man, despite limited education (8th grade, supplemented later by evening classes in vocational school) has worked up into a managerial position in the company where he was employed as machinist. Although warned to limit activity nine years ago, he continued this job and became acutely ill one year later. Following a period of hospitalization, he went back to work in the same company. Two years ago the company moved its operations to a southern state, leaving patient to manage the selling of the property here, which was

completed last May. The patient severed all connection with the company after payment for his services in June. He has had no employment since that time, has been worried, at "loose ends," and very undecided about his future.

The family consists of patient, his wife, his 22 year old son in Service, and an 80 year old father who died suddenly while patient was in the hospital. Housing is adequate and living expenses have been met by the wife's part-time work, patient's previous wages and more recently by his savings.

Mr. S. likes his doctor and seems quite dependent on him. He shows much anxiety regarding his heart condition which he says he can seldom forget. He feels frustrated by the activity limitations imposed because of it.

Case #21 - Mr. J.

Age: 33 Church: Lutheran

Sex: Male Occupation: Farmer

Onset and Severity

Patient had an illness involving one joint at age 16, and full blown rheumatic fever at 20. He then did fairly well until the age of 30, when cardiac symptoms became more severe and he was placed on digitalis and restricted activity. He has recently had subacute bacterial endocarditis, superimposed

on rheumatic heart disease with mitral stenosis and insufficiency and aortic stenosis and insufficiency, functional capacity II.

Emotional Stability

Good.

Case Summary

This 33 year old man grew up on a farm in a family which seldom used medical care. The early illness was diagnosed as rheumatoid arthritis and even when heart murmurs were noted, the patient failed to follow medical recommendations. Although he left his farm to learn another trade, he could not resist overdoing despite increasing symptoms. He has been more disturbed by discomfort of heart sensations than anything else and to avoid these and prolong his life, is willing to make some compromises in terms of work and recreation. He hopes to move his wife and two small children onto his father's farm and by sharing labor, make this a vocational success within his capacity. Before doing this, he would like to finish his apprenticeship with a tool and dye company. He sees this trade as something to "fall back on," although he acknowledges that he would probably be tempted to overdo in such a job as he has in the past.

Patient is very conscious of his heart, describes it as "skipping and flopping" and says that his wife cannot bear to hear or see his heart beat, and so leaves the room when he is

in distress. He is quite fearful of being considered lazy by those who do not know of his heart condition.

The patient had two small children whom he seems to enjoy. He likes fishing and bowling but has given up the latter because it is too strenuous for him.

Case #22 - Mr. M.

Age: 48 Church: Lutheran

Sex: Male Occupation: Forestry work

Onset and Severity

Patient is known to have had a heart murmur since childhood and was once refused insurance. However, until three weeks before hospitalization when he had a hemoptysis, he had not reduced his activity in any way. His condition is now diagnosed as rheumatic heart disease with aortic stenosis and insufficiency. He is placed on some activity restriction, functional capacity I.

Emotional Stability

Apparently good.

Case Summary

This 48 year old white Lutheran male is married but has no children. He has a two-year high school education and 8

months in business school. He has worked all of his life in the woods and has a civil service position with the Forestry Department. He dislikes confinement indoors and all of his hobbies are outdoor activities such as fishing, hunting and trapping.

Despite knowing of his heart condition since childhood, he has never modified his activities. As he appeared to have no symptoms, he tended to ignore his heart disease and thinks his friends did not believe he had it. He is now faced with increase in symptoms and needs to restrict his activity, and he is quite anxious and tends to over-restrict himself, although he has a good relationship with doctors and says he will follow their advice. He is already considering ways and means of living on a reduced income, derived from his wife's part-time job and whatever work he will be able to secure. He dreads the boredom of inactivity and believes that he can take over a woodworking business now operated by an elderly neighbor. He owns his own home and so far there has been little economic stress.

Case #23 - Mrs. T.

Age: 37 Church: Lutheran

Sex: Female Occupation: Housewife

Onset and Severity

Patient had a "fever" at age 8 and scarlet fever at 13, but heart symptoms were not found until she was 25 or 26 years old, when she had shortness of breath on exertion. Two years later during pregnancy, she had increasing difficulty including hemoptysis. She was delivered by Cesarean section. Since that time her activities have been curtailed seriously because of a cerebral vascular accident in 1953 which left her with a hemoplegia. She underwent surgery on a heart valve in February, 1955, two weeks prior to this interview. The functional capacity was III.

Emotional Stability

Patient reports that she has always been a "sensitive" nervous person, but she has had no nervous breakdowns.

Case Summary

This patient is married and has one child. Her relationship with her husband is not very good. She blames her parents for not having permitted her to meet more men and so allow her to make a better choice. She feels that her husband has not always understood her heart disease and there has been friction because of the medical expense for her care, her busband being very disturbed when all bills are not paid promptly.

The patient attempted to adopt a child when she had been warned against pregnancy. She was refused because of her heart

condition and therefore attempted to have a child of her own, with resultant increase in cardiac symptoms.

Because of her heart condition, she has had to have hired help in the home and her husband has had to secure assistance with the outside work. This has constituted quite a financial drain, although patient denies any reduction in the standard of living as a consequence.

After she had her stroke, the patient's face became twisted and she dragged her foot. She was disturbed about this deformity but said people were "nice." This plus the surgery have apparently helped to make the husband realize her need for medical care. She feels that her heart condition is such that she cannot make trips to see her own relatives, nor would she go on a vacation again, as a stroke occurred after a vacation trip which she describes as the "happiest time I ever had."

Case #24 - Mr. M.

Age: 35 Church: Catholic

Sex: Male Occupation: Bartender

Onset and Severity

The patient had rheumatic fever at 14 years of age and spent two months on bed rest. He was rejected for the Armed

Services. Five years later he had his second attack of rheumatic fever and spent two months in bed. In 1948, 1953 and 1955, he had additional attacks. The diagnosis is now mitral stenosis, auricular fibrillation and possible angina pectoris. He is on a low sodium diet and takes digitalis. The functional capacity is II.

Emotional Stability

Apparently good, although patient says that he is always somewhat nervous and has a quick temper.

Case Summary

This patient is a 35 year old Catholic man who works as a bartender. He has tended to deny his illness to himself and others and in his own words "worked till I dropped," without regard to the need for limited activity.

Mr. M. was divorced by his first wife, this being precipitated by his fatigue and inability to carry out social activities during the evening. He has two sons by his first marriage whom he sees frequently, and who are willing to participate in recreational activities which are not strenuous. He has remarried and is expecting a baby in a few months. He does not plan to have additional children as he knows he will die "some time" and does not want to leave his wife burdened with a large family.

The patient works in a hotel three days on a daytime shift and three nights. He describes this work as well within

his physical capacity and has not accepted the probability that he will have to reduce the hours in the fairly near future. He does not discuss his heart condition with others and seems rather fearful of incurring displeasure of fellow workers if he cannot do his share. He reports that his wife understands his condition and is willing to make allowances for him. She is 31 and never previously married. Her mother, a Polish woman who speaks no English, also lives in the home, and is employed in the same hotel as is patient's wife, a waitress.

Case #25 - Mr. G.

Age: 30 Church: Catholic

Sex: Male Occupation: Scientist

Onset and Severity

This patient had rheumatic fever at the age of 14, at which time he was reported to have a "leak in the heart." He was refused by the Army because of a heart murmur, but had no real symptoms until 2-1/2 years ago, when he was seen in the Student Health Center. At that time mitral stenosis was diagnosed, functional capacity is I.

Emotional Stability

Patient believes that he has been emotionally unstable

only since he started worrying about his heart 2-1/2 years ago. He thinks that since that time his whole personality has changed. He describes himself as formerly an optimistic, easy going individual but says that now he is irritable and suspicious and has periods of depression.

Case Summary

This 30 year old scientist has been a graduate student at the University and is now trying to secure a laboratory or research position. He wanted to be a doctor but decided not to because of the type of studying which would be required and because he did not wish to work with sick people.

The patient's wife is a secretary. She does not want children, although patient says that he does. They have been married five years and both are Catholic, but do not have a close relationship to their church. This was true of their parents and patient wishes that he could have "a faith like some people, but I can't."

When patient had rheumatic fever as an adolescent, he was supposed to stay in bed for two weeks but did not do so. He largely ignored his illness and was allowed to enter Military Service because he did not include a previous history of rheumatic fever in giving information concerning his health. His heart murmur was picked up 2-1/2 years ago at which time he became very apprehensive and is still fearful and nervous. He tries to conceal his condition on the one hand (in getting

a job, insurance, to keep his wife from worrying, etc.) and on the other hand, he worries so much he wonders if he needs a psychiatrist. He is quite preoccupied with death and fearful of surgery and restricts his activities more than the doctors advise.

CHAPTER V

FINDINGS -- FACTORS AND THEIR CONSEQUENCES

The general characteristics of the total group of 25 cases interviewed for this study of rheumatic heart disease will be found in Table I, page 81. From this table it can be seen that 15 of these patients were females and 10 were males. In Chapter II, page 8, it is mentioned that the incidence of rheumatic fever is usually more frequent among females than males in the ratio of 4 to 3 or 5 to 4. The ratio in this study of 3 to 2 therefore seems to be somewhat atypical with a proportionally too great number of female patients.

The age range for the females was 11 to 55 and for the males 17 to 57. Table II shows the frequency distribution of the 25 patients in various age groups.

Table II. Frequency Distribution in Age Groups

Age	Males	Females
10 - 19	1	2
20 - 29	0	3
30 - 39	5	4
40 - 49	3	4
50 - 59	1	2
Total number:	10	15

Table I. -- General Characteristics of the 25 Patients Interviewed

Case Number	Sex	Age	Marital Status	Church Affiliation	Usual Occupation
1	M	57	Married	Catholic	Contracting carpenter
2	M	38	Married	Protestant	Truck driver
3	F	40	Married	Methodist	Housewife (cashier)
4	F	21	Married	Catholic	Housewife
5	F	52	Married	Catholic	Housewife
6	F	47	Single	Protestant	Cashier
7	F	11	Single	Protestant	Student
8	F	31	Married	Lutheran	Housewife
9	M	48	Married	Protestant	Businessman (locker)
10	M	17	Single	Protestant	Former student
11	F	19	Single	Catholic	Student
12	F	43	Married	Catholic	Housewife
13	F	41	Married	Methodist	Housewife
14	M	33	Married	Methodist	Farmer, factory worker
15	F	37	Married	Protestant	Housewife
16	F	38	Married	Lutheran	Housewife
17	F	25	Married	Lutheran	Housewife
18	F	55	Widow	Catholic	Housewife (telephone operator)
19	F	29	Married	Christian Ass. of God	Housewife
20	M	49	Married	Lutheran	Machinist
21	M	33	Married	Lutheran	Farmer
22	M	48	Married	Lutheran	Forestry service

(Continued)

Table I (Continued)

Case Number	Sex	Age	Marital Status	Church Affiliation	Usual Occupation
23	F	37	Married	Lutheran	Housewife
24	M	35	Married	Catholic	Bartender
25	M	30	Married	Catholic	Scientist

All but 5 patients were married at the time of the interview. One female patient was widowed and 3 females and one male were single.

Regarding church affiliations, 8 patients were Catholic. Seventeen patients were Protestant and of this number the following were specifically identified: 7 Lutheran, 3 Methodist and one patient belonging to the Christian Assembly of God.

In looking at the usual occupations for the group, Table I indicates that of the 15 females 12 gave their occupations as housewives. Two of these patients had earlier held jobs in addition to their household duties but had been forced to discontinue employment because of increase in heart symptoms. One female patient listed her occupation as cashier. Two girls were students, one in high school and one in grade school. One male patient, a former high school student, had quit school because of his heart condition and had no current vocation. Two males were farmers and 2 had been managing their own businesses. The remaining male patients listed their occupations as bartender, forestry service, machinist, scientist and truck driver.

Eighteen of the 25 patients under study had a history of rheumatic fever in childhood or as young adults. The first attack had occurred when these patients were between 5 and 25 years of age and in 10 instances between 12 and 16 years of age. For some the rheumatic fever was recognized and diagnosed at the time when it occurred and some type of treatment

instigated. In other cases the patient's illness was not recognized as rheumatic fever and therefore appropriate treatment was not given. Two patients (#14 and 23) gave histories of scarlet fever in childhood. One patient (#18) had "rheumatism" and another (#22) was reported as having a "heart murmur" when they were children. In addition Mrs. M. (#12) stated that she had "a nervous heart in childhood." Rheumatic heart disease without any known history of rheumatic involvement, scarlet fever or previous cardiac symptoms was present in only 2 cases (#2 and 15).

The amount of disability resulting from the progress of the disease from the onset of symptoms to the time of the interview will be shown in Table III on page 85. In some instances rheumatic heart disease was diagnosed prior to the onset of symptoms of which the patient was aware. In these instances the patients may or may not have avoided strenuous activities. The pattern seems to be that, although the patient had known about a heart murmur, he had paid little attention to this and continued to lead a normal life until he actually experienced cardiac symptoms. In other instances the heart disease was not diagnosed until the patient began to suffer from shortness of breath, fatigue, etc., which may have continued for some time before a diagnosis of rheumatic heart disease was established. It was therefore felt that the length of time between the onset of symptoms and the time of the interview would be a better basis for comparison between

patients than the interval between the diagnosis of rheumatic heart disease and the time of the study. Disability caused by the disease will be measured by the patient's functional capacity according to the classification adopted by the American Heart Association, listed and described in Chapter II on page 19.

Table III. The Degree of Disability

Length of time since onset of heart symptoms	Minimal F.C. I	Moderate F.C. II	Severe F.C. III	Very severe F.C. IV	Totals
3 weeks to 2 years	1	1	3	1	6
2 years to 8 years	3	1	3	2	9
8 years to 15 years	1	3	3	1	8
15 years and over	0	1	0	1	2
Totals	5	6	9	5	25

From this table it can be seen that a total of 5 persons at the time of the interview were classed as having functional capacity I which indicates that ordinary physical activity did not cause much discomfort. However, excessive strain did produce some symptoms and for all these patients some limitation on activity had been recommended as a preventive measure or was felt necessary by the patient because of low activity tolerance. Six patients classified as having functional capacity II had to limit the amount of physical activity to

some extent to avoid discomfort in the form of undue fatigue, palpitation, dyspnea or anginal pain. In 9 cases (functional capacity III) these symptoms were caused by less than ordinary activity and the patient had to submit himself to a marked limitation on physical activity. Five others (functional capacity IV) were severely handicapped as they were unable to carry on any physical activity without discomfort and experienced heart symptoms even at rest.

The degree of emotional stability for each patient was evaluated, and of the 25 cases it was felt that only 11 patients could be considered as stable individuals both before and after the onset of cardiac symptoms. Five patients (#5, 12, 13, 18, 23) according to themselves or to relatives, had always been more or less "nervous" or "high strung." All these tended to worry about their heart conditions and fear of death appeared to be present in 2 of these cases (#18 and 23). Six patients (#3, 8, 9, 16, 20, 25) gave evidence of having been emotionally stable individuals until the onset of their heart symptoms. Since that time they had developed strong anxiety regarding their conditions. Fear of death was expressed or inferred in all but one of these cases. This patient (#8) was, however, worried not only about her physical condition but also about the economic consequences of her disease. She was tense and apprehensive and a diagnosis of anxiety tension state was established in addition to that of rheumatic heart disease. An anxiety reaction was diagnosed

also in the case of Robert (#10) and it was felt that his present symptoms of shortness of breath and fatigue were in all probability evidence of this. Another patient (#2) was considered to have a cardiac neurosis superimposed on organic disease. This man had suffered a "nervous breakdown" at the time of his first cardiac attack in 1945 since which time he had had an exaggerated fear regarding the seriousness of his heart condition. One female patient (#17) was considered to be immature with longstanding pattern of withdrawn and insecure behavior.

It has not been determined through statistical methods whether there is any correlation between the degree of emotional stability of the 25 patients under study and the degree of incapacity and severity of heart symptoms. However, when reviewing the material it does not appear to be any such relationship. For instance, of the 5 patients classified as having functional capacity IV, 2 were found to be emotionally stable and 3 were found in the group of emotionally unstable patients. Similarly, 2 patients classified as having functional capacity I were considered emotionally stable and 3 emotionally unstable. When one looks at the group in which emotional symptoms began at the time of the onset of heart symptoms one again sees a range of functional capacity from I to IV. Likewise there does not appear to be any relationship between emotional stability and the length of time the disease had been experienced, whether the time span has been dated from

the onset of symptoms or from the time when rheumatic heart disease first was diagnosed.

This general description of the medical condition and the emotional stability of the 25 patients under study will be followed by discussion of the "illness factors" and their anticipated consequences which will include additional material regarding the above content.

These factors will be grouped into four areas as listed below.

I. Public attitudes

1. Anxiety

II. Etiology

1. Hereditary tendency
2. Neglect in care

III. Symptomatology

1. Chronicity
2. Unpredictability of increase in symptoms
3. Progressive severity
4. Lack of external evidence of disease
5. Persistent pain
6. Awareness of visceral dysfunction
7. Low activity tolerance

IV. Treatment

1. Need for consistent medical supervision
2. Need for regular medication
3. Self-determination concerning medication and treatment
4. Hospitalization
5. Required inactivity
6. Dietary limitations
7. Smoking limitations

If additional factors are discovered to be pertinent as a result of the analysis of material they will be added to the

appropriate area.

The results of this evaluation have been systematically recorded on separate charts which are to be found in the appendix. Each area is listed in tables IV to VII and the factors in each group are designated by small letters in alphabetical sequence. The headings for these charts are set up to indicate whether the factor is found to be "not present," "present," or "present with consequence denied." The anticipated consequences are listed and space for unexpected consequences is provided in the column marked "others." If an unanticipated consequence occurs in 5 or more cases it will be listed in the table under a separate heading. Consequences which are not found to be present will not be listed in the table, but will be included in the discussion.

Public Attitudes

In setting up the study of factors in disease which contribute to social stress it was believed that public attitudes toward the specific illnesses might have some influence on the adjustment of the individuals suffering from such diseases. One factor was thought to be specifically related to rheumatic heart disease, this being "anxiety." It is known that many persons fear heart disease. This apprehension might become the basis for over solicitude for or pessimism concerning the prognosis for persons suffering from the disease.

Fear of heart disease might be sufficient to cause

avoidance of persons suffering from it. Such patients might serve to remind others that the disease may strike anyone and so is a universal threat. There might also be reluctance to expose oneself to responsibilities which might be incurred should the person with heart disease suddenly become more ill or die.

If such general attitudes exist the consequences of anxiety for the patient might well be the stimulation of additional apprehensiveness on the part of the patient himself as well as difficulty in living as normally as possible within the community. If avoidance of the patient is present the consequences might be involuntary social isolation, difficulty in securing employment (even work within the capacity of the patient), threats of institutional placement, patient's feelings of rejection with withdrawal from social contacts or attempts by the patient to deny or conceal his illness to avoid ostracism or stigma.

Information secured in this study revealed that these factors and their anticipated consequences did not play a large role. On the whole the patients felt that "the public" had been understanding and sympathetic. There were, however, some over-protectiveness and concern and some tendency on the part of patients to conceal the disease from persons other than the immediate family. These and related consequences are discussed below.

Anxiety (Table IV, see appendix)

This factor seemed to be present to some extent in 13 of the 25 cases under study.

Eight of these patients had either experienced over-solicitousness from the general public or feared that this would happen if their heart conditions became generally known. Two patients (#3 and 11) resented being treated as "invalids." Two others (#16 and 18) felt that people were "frightened" or "worried" about their heart conditions and that people tended to be "more helpful than you need" (#18).

Conflicting advice regarding "safe" activity was present in 2 cases (#7 and 10). For example, the mother of the 11 year old girl (#7) felt that people give too much advice, most of which is contrary to their doctor's recommendations.

Two male patients (#24 and 25) had avoided telling people about their heart conditions as they did not want people to "worry" or to be "sorry" for them. This was felt especially by Mr. G. (#25) who directly stated that he believed that people were "fearful" for patients with heart disease.

The consequence of pessimism concerning prognosis was present in 2 cases.

Mrs. D (#4) felt that people seemed to think that she had "one foot in the grave" and could do "nothing but lie down" which attitude she disliked. Miss R. (#11) resented her classmates' attitudes after she returned to school following a long period of bedrest and they told her "not to laugh and

get excited" and to do nothing but "smile."

Social "ostracism." This consequence did not seem to be present in the sense that the patients were avoided by others or tended to isolate themselves or withdraw from social contacts because of feelings of rejection. Nor was threat of institutional placement present. However, 11 patients attempted to deny or conceal their disease. In the majority of these cases fear of social repulsion was only implied and the consequence seemed to be mainly related to a wish to avoid curiosity, pity or worry from the general public.

One female patient (#18) used to "pretend to people" that she was well and had even gone on a couple of dates concealing her illness, although she knew that she had "to tell" if "things got serious." Mr. E. (#2) had concealed his disease to avoid "kidding" from the younger men on his job. Robert (#10), the teenaged boy, took some "minor" risks such as running and lifting rather than tell about his heart disease. Other patients stated more vaguely that they did not want to "tell people" about their heart condition, although they gave no specific reason. Their reluctance seemed to be based on a desire to avoid curiosity, pity or worry.

Two male patients attempted to conceal their illness in relation to employment. Mr. M (#24) was afraid that he would "lose good will" of fellow workers if he could not do his "share" and his illness became known. Mr. G. (#25) was attempting to conceal his disease when applying for jobs, as

he believed that people were fearful for persons with heart disease and therefore reluctant to hire them.

No other consequences appeared to be present as a result of this factor.

Etiology

The second group of factorial components considered in the study was related to the etiology of rheumatic heart disease. It was decided that the factors of "hereditary tendency" and "neglect in care" could appropriately be analyzed as they are both likely to be present in cases of rheumatic heart disease.

The hereditary factor seemed to be a good factor for study as knowledge that a disease may have been inherited may cause feelings of bitterness and hostility toward the patient's parents. Fear of transmitting the disease to offspring may make him reluctant to marry and have children. Feelings of guilt resulting in over-protection may be present in parents of children who have developed rheumatic heart disease.

Neglect in care was chosen since emotional responses and reactions can become intensified when a patient believes his condition was caused or aggravated because of any delay in diagnosing or prescribing for his disease or if he feels his care was neglected by himself or others. These patients therefore might have hostility toward persons in charge of their medical or physical care or feelings of guilt toward themselves.

A discussion of the 2 factors and their anticipated consequences will follow below. The data obtained have also been recorded on separate charts similar to those concerning the factor of public attitudes. These charts are to be found in the appendix.

Hereditary Tendency (Table V-a, see appendix)

The factor of hereditary tendency was not present in 13 of the 25 cases. However, in 4 of these the medical record indicated that some kind of heart disease had occurred in the patient's family, but the patient himself did not believe that he had inherited his heart disease. The presence of the factor was accepted in 12 cases. Any consequences as a result of this factor were denied in 8 instances. Typical in this group were comments such as: "it must be some weakness in the family" (#3) and "it seems to run in the family" (#10). Consequences resulting from the factor were present in the other 4 cases.

The elements of blame of parents and guilt feelings of parents with consequent overprotection did not appear to be consequential.

Fear of marriage seemed to be a consequence in one case. Mrs. D (#4) consulted her family doctor before her marriage because she wanted his opinion concerning her ability to have children and concerning the possibility that eventual children would develop rheumatic fever.

Fear of having children was found in one case (#7) where Mary's parents were reluctant to have more children as they feared that these also might develop rheumatic fever and subsequent heart disease.

The consequence of fear for children was present in 3 cases. Mrs. D. (#4) was told that there is a 50 percent chance that her children (2-1/2 and 1-1/2 years of age) will get rheumatic heart disease. She is determined to "watch them pretty close" in order to detect early signs of rheumatic involvement. Mrs. M. (#12) stated that "I have not gone overboard because I am ill myself," but the children are carefully checked by the family doctor who is aware of the hereditary factor. Mrs. T. (#23) does not believe that she inherited her disease from her parents, but she watches her child very carefully to prevent respiratory infections.

No unanticipated consequences of this factor of hereditary tendency were present.

Neglect in Care (Table V-b, see appendix)

The factor of neglect in care seems to be of significance in rheumatic heart disease as it was present in 21 of the 25 cases and accepted as having one or more consequences in all these instances.

The consequence of blame of others or themselves was present in 10 cases. Two of these patients and the mother of another blamed themselves. Thus Mr. E. (#2) stated that

he "drank a lot as a boy" and generally neglected his health which he believed might have contributed to his later developing a heart condition. Mrs. H. (#16) blamed herself for not having consulted a doctor during recurrent episodes of rheumatic fever and believed that her heart would have been less damaged if she had done so. In the third case the mother of the patient (Mary, #7) felt that poor living quarters and "too much moving around" when the patient was a small child may have precipitated the rheumatic infection which resulted in heart disease.

Seven patients blamed members of their families for various reasons, such as neglect in providing medical care (#10, 17, 19, 21) or neglect in providing adequate clothing (#17). Miss A. (#6) believed that if she had not been raised in a large family, her parents would have paid more attention to her care and gained a better understanding of the necessary precautions for avoidance of heart disease. Mrs. T. (#23) and Mr. G. (#25) blamed their mothers for lack of understanding of their illness when they had rheumatic fever and felt that later cardiac difficulties could have been prevented.

Seven patients expressed <u>hostility toward their doctors</u>. Most of these patients (#4, 12, 15, 21) based their feelings on lack of adequate treatment because of incorrect diagnosis. They all implied that the doctor who attended them during their first attack of rheumatic fever (or scarlet fever) did not have sufficient knowledge of the disease, its consequences, and its

treatment. Statements such as "the local doctor was a pill-doctor who did not keep up with modern ideas" (#6) and "the family doctor seemed to be fooling around" (#4) were typical in these cases.

Blame on inadequacy of medical knowledge was an unanticipated consequence related to that just mentioned. It seemed to be significant as it was present in 8 cases. These patients attributed their heart disease to the fact that until rather recently the medical profession did not have sufficient knowledge of rheumatic fever and its tendency to leave permanent heart damage. They gave this as the reason why adequate treatment was not prescribed. This was expressed in comments such as "medicine was not advanced far enough" (#9 and 13) and "doctors knew less in those days" (#21).

Another unexpected consequence was expressed by Mr. G. (#1) who considered his heart disease due to "exposures during the War" although his first known attack of rheumatic fever occurred first in 1925 when he was in the Army.

Symptomatology

The third aspect of the disease to be considered in this study is symptomatology. A few examples have been given in Chapter II concerning elements in rheumatic heart disease which are likely to cause or increase social and emotional stress. The 7 factors listed at the end of that chapter will now be taken up in a detailed discussion as they are found to

have affected each of the 25 patients under study. Each factor and its anticipated consequences will also be systematically recorded on separate charts in the same way as those concerning public attitudes and etiology.

Chronicity (Table VI-a, see appendix)

This factor was found to be present in all 25 cases. Twenty-three patients accepted it directly as an element in their disease while two patients who had experienced heart symptoms only for a few months (#5 and 14) still had not emotionally accepted the fact that they would probably have to submit themselves to certain restrictions in the future. However, they expressed feelings of discouragement in connection with the mere idea of limitation of activity on a continuing basis. The consequence of security and meeting dependency needs did not appear to be present.

The consequence of overprotection by family was present in 4 cases. Two patients, Mrs. M. (#3) and Mrs. B. (#5), had apparently fully accepted the overprotective attitudes of their families. They both seemed to be quite dependent on their husbands. Mrs. M. (#3) describes her husband as "a wonderful nurse who does a lot for me." Mrs. H. (#13) appreciated her family's concern about her health, but their oversolicitousness regarding restrictions of activity and other medical recommendations made her feel that they "suffered" for her sake and created feelings of guilt in the patient. Overprotection expressed through unnecessary restrictions on

activity was also present in case #10 and resented by the adolescent patient.

Economic stress appeared to be a prominent consequence as 19 patients expressed concern about their financial situation. On-going expense for medical care was considered as a problem in 13 of these cases, as it tended to interfere with other financial responsibilities or to prevent new investments. Eleven patients stated that change to a less profitable employment or loss of employment with complete loss of income had caused economic stress. Two of these were teenagers who had never been able to work more than a very short time (#11) or not at all (#10). They both wished that they could contribute to their support and deeply resented economic dependency on their families past the age when emancipation from the family is a normal expectation. Others were disturbed by their need to accept public assistance (#2 and 14) or feared that they soon would have to do so (#21). Three housewives who had had to hire help to do their housework felt the expense for this was a considerable economic burden (#8, 12, 23).

It was found that the consequence of lack of motivation to work towards the future was present in 2 cases. Robert (#10) did not have much hope that he would be any better and had made no plans whatsoever for his future. Mr. S. (#20) tended to "sit back and do nothing" while he was waiting for the medical profession to learn enough to help him to reach a better condition.

Shopping around for cure seemed to be a consequence only in 2 cases. Mr. G. (#1) had no confidence in his local doctor and went to many doctors hoping to be cured by heart surgery. This was also his reason for coming to the University Hospitals. Mrs. B. (#5) was shopping around to get cured for a skin rash which she had developed after taking digitalis for her heart condition.

In connection with this consequence it may also be mentioned that many patients did not feel that medical supervision by their family doctor was sufficient and so consulted heart specialists or asked to be referred to the University Hospitals in order to get "expert" examinations of their hearts.

The most prominent reaction to the chronicity factor was discouragement and depression which was expressed with various intensity by 24 patients.

Some were depressed because they could not do what they were vocationally capable of (#1, 3, 20, 21). Two female patients believed that their chances to get married (#6) or to remarry (#18) had been considerably diminished by their disease. They felt that their life could not be as happy and meaningful as would have otherwise been the case. Mrs. D. (#4) was told not to have more children which recommendation she resented as it was in conflict with her and her husband's wish to have a "great big family" and also with their Catholic faith. Mrs. T. (#23) also had been advised not to have any

children which she found "discouraging."

Several patients were concerned about the effects of their illness on their families. Thus Mr. E. (#2) found it very depressing that he would be unable to give his two daughters a good education. Mrs. M. (#3) felt discouraged and guilty because she could not give her children the "companionship" she felt that they needed. Mrs. H. (#13) found it "hard on the family" and "unfair" that they would have to assume responsibility for the housework and for her care. The majority of the patients had accepted at present their disease as something they had to live with and to adjust to and only occasionally gave in to depressive moods. However, many stated that they had difficulty in accepting the chronic aspect of their condition when they first learned about it. As mentioned earlier, this was the reaction of Mr. G. (#14) and Mrs. B. (#5). Others expressed the same feeling in sentences such as "I could not believe it at first" (#3), "it was awfully hard to take" (#13), and "I broke down about it" (#16).

In 2 of the 25 cases another consequence appeared which had a religious connotation. Mrs. V. (#19) prayed for "healing" but believed that it was up to God to decide if she would be cured or not. Likewise Mrs. D. (#4) believed that it was "up to the Lord to decide" how her future condition would be.

Unpredictability of Increase in Symptoms (Table VI-b, see appendix)

As mentioned in Chapter II the rheumatic infection has a tendency to recur with increased heart damage and symptomatology as a consequence. This and the general fear of a heart attack in patients suffering from any form of heart disease made us believe that the factor of unpredictability of increase in symptoms would be prominent in rheumatic heart disease. This also proved to be the case as 23 patients accepted this factor as an element in their illness and of those, 20 patients found it as a cause of social or emotional stress.

However the anticipated consequence of limitation in social participation was found in only 2 cases. Mr. E. (#2) who had developed strong anxiety concerning his condition "kept away from people" for fear that he would suddenly faint or get dizzy. This fear subsided when he learned that his condition was less serious than he had been led to believe by his local doctor. Mr. M. (#9) had been warned not to "go down town" by his local doctor who feared that the patient would contract a respiratory infection which might aggravate his heart condition.

√The consequence of interference with job activities was present in 5 cases. Mr. G. (#1) felt that he would not be "dependable" in a job as he might have to go to the hospital any time. Mr. E. (#2) had been warned against taking a factory job as he might get a spell of dizziness and get caught in a machine. Miss R. (#11) had to quit her first job because of

increase in symptoms. She also felt that the unpredictability of her condition hampered her vocational plans. Two patients (#18 and 20) felt that they could not take jobs which would require that they feel well every day.

Constant fear of attack seemed to be the most important consequence of the unpredictability of increase in symptoms. It was present in 13 cases in most of which it exercised a strong influence upon the patient's life. Mr. M. (#9) talked about "the horror all the time that something would happen" which plagued him when he was cared for at home. Mrs. K. (#17) stated that she tried to keep the fear of recurrence of attack out of her mind as she otherwise "would go crazy." Fear of being left alone afflicted many patients (#3, 5, 8, 16). Mrs. B. (#18) and Mrs. S. (#15) feared that overactivity would increase their symptoms and were extremely careful not to "overdo." Miss A. (#6) had never learned to drive a car as "I didn't think that I should." Likewise Mrs. H. (#13) had not driven her car lately as she "did not have that much confidence."

It was felt that anxiety on the part of relatives was present in 8 cases. In 4 of these (#3, 5, 10, 13) some degree of overprotection of the patient by members of his family seemed to have developed. Mrs. B's. (#5) husband had given up his job, at least temporarily, to stay with the patient and seldom left her alone. Mrs. H. (#13) stated that her family was "worrying all the time and afraid that they will not do the

right thing." She felt an "obligation" to keep strictly to her medical regime in order to make her family "happier and more relaxed." Robert (#10) resented his mother's over-protection and used his own judgement when limitation of activity was concerned.

Three male patients, Mr. E. (#3), Mr. G. (#14) and Mr. M. (#22), felt that their wives had been worried over sudden or possible increase in symptoms, but in these cases no over-protection seemed to be present. Anxiety without overprotection was also accepted as a consequence by Mrs. D. (#4) who stated that her husband had always worried more about her heart than she had.

✓ Fear of death appeared as a consequence in 6 cases. Mrs. M. (#3) feared that she would "choke to death" when she had an actual attack. An episode when Mrs. K. (#17) had difficulty in breathing also created fear of death. Mr. E. (#2) had a heart attack 7 years ago at which time he developed extreme anxiety regarding his condition as the local doctor had given him the impression that he would "drop dead any minute." One patient (#25) had once seen a man suddenly die in a coronary attack and feared that the same would some time happen to him.

No unexpected consequences of this factor of unpredictability of increase in symptoms were present.

Progressive Severity (Table VI-c, see appendix)

This factor was present in 24 cases and accepted as

having one or more consequences in all instances. It was not present in case #7 as the heart condition of the 11 year old girl actually had improved and the girl was considered as able to lead a normal life in the future if recurrence of the rheumatic infection could be prevented. It might be expected that the group of patients seen at the University Hospitals for special care would have a disproportionate amount of disability which may account in part for the high incidence of this factor. If more children had been included this might not have been true. It may be recalled that in selecting cases several were reviewed from the out patient cardiac clinic, but could not be included in the study as these children were not considered as having a lasting heart damage as a result of rheumatic fever.

For the cases under study, however, the factor of progressive severity seemed to have significance as can be noted from the discussion below.

Lack of motivation to work towards the future did not appear to be consequential of this specific factor but seemed more related to the chronicity of the disease, a factor previously discussed.

The consequence of increased maladjustment seemed to be present in 21 cases. It should, however, be mentioned that in case #4 and case #21 this was due mainly to a secondary infection, subacute bacterial endocarditis, superimposed on previous heart disease.

The amount of maladjustment ranged from a complete delegation of duties and responsibilities to others by some patients to a minimal amount of change for others. In some cases it was difficult to determine if the degree of maladjustment which was present at the time of the interview would be permanent, or if the patient would be able to resume some of his responsibilities in the future.

In 10 cases increase in severity and frequency of symptoms had caused unemployment or forced the patient to change to a less strenuous job. Two of these patients (#3 and 18) were females who had held jobs outside of their homes previous to their first onset of severe heart symptoms. One high school girl (#11) had been forced to give up a temporary summer job because of recurrence of symptoms. She has also been unable to attend school the last two semesters. Ten housewives could not continue the standards of housekeeping they formerly maintained or they had had to delegate the main part of their housework to others in the family or to hired help. In 4 cases (#3, 16, 20, 25) excessive nervousness and anxiety regarding the progressive severity of the heart condition seemed to be the main basis for maladjustment.

In the majority of the 21 cases the patient was experiencing an increased dependency on relatives, friends, and community and increased difficulty in maintaining control over various life situations.

Four patients expressed <u>discouragement</u> as a consequence

of progressive severity of their symptoms. Miss A. (#6) was discouraged over her increased tiredness and wondered how she would be able to take care of her elderly parents in the future. Miss R. (#11) found it discouraging that her first attempt to support herself had led to hospitalization and was "disgusted with the whole thing." Two patients were disappointed with the results of surgery. Mr. M. (#9) felt that his condition had been progressively worse instead of better after a valvulotomy in July 1954 and regretted that he ever had submitted himself to surgery. Mrs. S.'s (#15) symptoms had temporarily subsided after a valvulotomy in September 1953 but had returned after a few months. Mrs. S.'s comment was that her improvement was probably "too good to last."

Irritability was found to be a consequence only in one case. The disappointment over the result of surgery and his worry over the future made Mr. M. (#9) irritable and apt to "bark at people."

Fear of death was considered to be a consequence in 13 cases. It was expressed directly by 6 patients and implied from the patient's statements or attitudes in the remainder of the 13 cases. Statements such as "I did not know how it was going to come out" (#16) and "if you are careful you may stretch it out, or else..." (#21) implied fear of death. Mrs. S. (#15) and Mrs. D. (#4) were concerned over what would happen to their children if they died. Mr. G. (#25) was very fearful of dying and was trying to get insurance to protect

his wife. Mr. M. (#24) also gave evidence of being fearful of dying and was concerned over the future of his wife and the expected baby.

The consequence desperate seeking of medical attention was to some extent present in two cases. Mr. G. (#1) had consulted many doctors seeking a cure and finally succeeded to "talk his family doctor into" sending him to the University Hospitals. Mrs. S. (#15) had also twice persuaded her local doctor to refer her to the University Hospitals as she felt that she only got worse under his care.

Feelings of futility were expressed by one patient (#9). This man was disappointed that heart surgery had not interrupted the progressive severity of his condition. Now he had no hope to get "cured" and felt that life had lost its meaning and that he had nothing to look forward to.

Feelings of futility seemed more related to the factor of required inactivity and will be discussed in connection with this factor.

Many patients had requested or accepted a recommendation for surgery to interrupt the progressive severity of symptoms. This unanticipated consequence was present in 10 cases. Some of these patients (#9, 15, 23) had already undergone heart surgery. Others (#17, 19, 24) had come to the hospital for a surgical evaluation and had already made up their minds to have an operation if this was recommended. Others (#1, 3, 20, 25) talked about surgery in a vague way as an escape from the

progressivity of symptoms. Mrs. K. (#17) can be mentioned as a typical example of the second group as she had accepted surgery hoping that it would "save her." An interesting reaction was expressed by Mr. G. (#25) who wanted surgery to check his disease and avoid death, but who also said that he could not stand the idea of "cutting" and of "having a doctor grab my heart and make a hole in it."

Neglect in care, disregard of medical advice, and lack of understanding from relatives made 15 patients blame themselves or others for the progression of their disease.

Self-blame was present in 13 cases. Eight patients (#1, 2, 5, 8, 9, 11, 21, 24) felt that working too hard had contributed to increase or recurrence of symptoms. Neglect in following medical advice regarding rest, diet or restricted activity was present in most of these 8 cases and was also reported by 3 others (#12, 15, 20) who did not overwork. Two additional female patients (#4 and 23) had been warned against pregnancy but had tried to have children and had become much worse in consequence. In all these cases the patient felt responsible for and more or less guilty about the change for the worse which he experienced.

Four patients blamed others for increased symptomatology. Miss A. (#6) felt that her condition would have been much better now if her family and her employers had shown more understanding of her disease. The same feeling was expressed by Mrs. T. (#23), who blamed her husband for a lack of

understanding regarding her need for restricted activity and felt that he expected too much of her. Mr. M. (#9) considered that strenuous work in the Army had aggravated his heart condition. Robert (#10) blamed his stepfather for lack of understanding about his disease and refusal to provide adequate medical care.

Several patients believed that faulty medical advice or insufficient medical recommendations had contributed to the progressive severity of the heart disease and blame of medical doctor was expressed as an unanticipated consequence by 11 patients. Five of these (#2, 3, 14, 21, 24) felt that the physician who had first discovered their heart murmur or who had attended them at the time of their first cardiac symptoms had neglected to give them sufficient instructions regarding necessary precautions. Mrs. S. (#15) had not been warned against another pregnancy and blamed her doctor for this as she believed that her last pregnancy had aggravated her symptoms. She also blamed her physician for failure to refer her to this hospital when her symptoms became worse. Mrs. M. (#12) felt that her condition would have been less severe if a heart specialist had been present during the delivery of her fourth child. One patient (#23) felt that "doctors should keep after you more" to prevent the patients from exceeding the permitted amount of activity. Mr. G. (#25) was sure that his heart condition had become "worse" as a heart murmur had been overlooked twice when he had undergone physical examinations.

Two patients blamed their doctors for having given faulty advice. Thus Mr. M. (#9) regretted that he had let his family doctor persuade him to undergo surgery which the patient considered as a "mistake" as his condition had become worse instead of better. Mr. M. (#22) felt that he had "overdone" in attempting to "lead a normal life" as medically recommended which had resulted in increase of symptoms.

Lack of External Evidence of the Disease (Table VI-d, see appendix)

This factor was present in all 25 cases. However, in 2 of these secondary results of the illness were observable and the patients felt that they were made conspicuous by them. This will be discussed under the factor title "deformity."

Eleven of the total group did not consider that the factor of lack of external evidence had any adverse effects. One or more consequences were present in 14 cases.

Seven patients felt that it was harder to explain the disease to people because it did not "show." In 3 cases (#10, 17, 23) members of the patient's family had difficulty in accepting the need for expensive medical treatment as they could not understand that the patient really was sick. Miss A. (#6), who had always looked healthy, felt that her family had expected her to assume too much responsibility and that they completely lacked understanding of her disease. Likewise Mrs. V. (#19) wondered if her relatives realized that she

had heart disease as they imposed on her and refused to do their share of the housework. Mrs. W. (#8) had come to believe that "it's no use" as she had repeatedly tried to explain her disease to her mother-in-law who "will not believe that my sickness will do all that damage." A healthy complexion had made it difficult for Miss R. (#11) to make people realize that she was sick and had to submit herself to certain restrictions such as smoking limitations. Robert (#10) had a very hard time at school as his illness had not yet been diagnosed as rheumatic heart disease. His classmates teased him for being a "sissy" and Robert did not know what to tell them as "I didn't know what it was myself."

Seven patients felt that the lack of external evidence of their disease made it harder to justify limited activity to themselves or to others. Mrs. M. (#12) and Mrs. T. (#23) both admitted that they tended to "overdo" when they felt well. This had been especially tempting for Mrs. T. who had a "hard time realizing that she had heart trouble."

Mr. J. (#21) felt that he could not say "no" and refuse to help when asked to do heavy work on the job. Even if he sometimes did protest to his boss, he did not want to complain too much as he was afraid of losing his employment. Some patients (#8, 10, 11) found it difficult to get members of their family to realize the need for limited activity. Mrs. H. (#13) found her family understanding but had found that "other people" had difficulty in understanding why she could

not participate in various social activities.

Lack of secondary gain was found to be a consequence only in one case. Miss A. (#6) compared herself with a spastic sister for whom the rest of the family "really did a lot" while the patient had always met lack of understanding of her disease and problems related to it.

Some of the same patients who had found it difficult to justify limited activity also felt that they were suspected of malignering (#8, 10, 11, 21). Taken all together 7 patients expressed this as a consequence. Five of these patients (#2, 8, 10, 20, 21) felt that people thought that they were "lazy." Mrs. K. (#17) stated that her husband had not "believed" her when she had told him that she did not feel well and that he had considered her symptoms as just more evidence of her emotional problems. One patient (#11) was accused by her family doctor of "exaggerating" her symptoms at the time of her first attack of rheumatic fever as he believed that she enjoyed being "pampered" and getting extra attention.

The consequence attempt to be "normal" and deny limitations to self or others was found in 6 cases. Three patients (#2, 6, 24) admitted that they had purposely or unintentionally worked too much or too hard as they did not want to reveal their limitations to others. One teenager, Robert (#10) took some "minor risks" such as running and lifting rather than tell people about his heart disease and the restrictions he was supposed to submit himself to. Another older adolescent,

Miss R. (#11) felt that she "should be able to support" herself so she took a job to earn money for the coming school semester. In her attempts to fulfill the requirements of her employer she neglected her need for rest which resulted in recurrence of symptoms. One patient (#22) had known about a heart murmur since childhood but had been leading a "normal" life as he did not really believe that he had heart trouble because there was no "visual" evidence of it until he "spit up blood" 3 weeks prior to the interview.

Six patients (#4, 9, 14, 16, 18, 25) felt that the lack of external evidence had positive effects as it made it possible to conceal their disease and thus avoid curiosity or pity from people they were not closely related to.

No unanticipated consequences appeared to be present.

Persistent Pain (Table VI-e, see appendix)

This factor seems to be relatively unimportant in the 25 cases of rheumatic fever under study. It was non-existent in 13 cases and did not seem to exert much influence in the remaining 12. Three patients had experienced pain on exertion and 6 patients had only intermittent pain. Pain of a more persistent nature was present in 2 cases (#20 and 24) and in one additional case (#5) had been present only during 7 weeks after the patient's first heart attack.

In two cases nervousness tended to precipitate (#25) or aggravate (#20) pain. One patient (#24) stated that pain had served as a warning that he needed medical care but he

denied any adverse effects. Consequences of the factor were admitted only in 3 cases.

The anticipated consequence of limited job performance and socialization followed by feelings of unworthiness was not found to be present.

Irritability was a consequence in 3 cases. Mr. G. (#1) had difficulty in maintaining his philosophy of being "cheerful and happy" when he was in pain. Pain made Mrs. B. (#5) nervous and irritable and seemed to increase her anxiety regarding her condition when it was present during the first 7 weeks of her illness. Mrs. H. also became "edgy and nervous" when she had pain because she knew then that she was "worse."

Anxiety in relatives appeared as an unanticipated consequence in one case (#5). Mrs. B. felt that her pain not only made her nervous but also caused her husband to be "upset."

Awareness of Visceral Dysfunction (Table VI-f, see appendix)

The heart is our most vital organ and disturbances in its function are apt to cause anxiety and fear. At times patients are more concerned about irregularities in the rhythm and the force of the heart beat than about other heart symptoms which may actually be more serious. This awareness of heart malfunction was therefore considered an appropriate factor for study. It was found to be present in 20 of the 25 cases and was accepted as a cause of stress by 15 patients.

Constant concern about symptoms was expressed as a consequence by 12 patients of which 7 were females and 5 males. These patients were all very conscious of irregularities in the rhythm of the heart beat or of a "pounding heart." They tended to watch themselves and their "reactions" and "body sensations" closely and could never forget that they had "such a thing as a heart" as one patient (#5) expressed it. Mr. M.'s (#9) comment may serve as another illustration: "You can't very well overlook things. The worse you are the more conscious you are of it (the heart) all the time." Two teeneagers (#10 and 11) reacted with "disgust" to the palpitation of the heart. Some patients (#18 and 21) used the palpitation as a warning not to overdo.

The consequence of preoccupation with organ involved was felt to be a consequence only in the case of Mrs. M. (#3) who read all she "could get hold of" about heart disease and who commented that "you study about your ailment and you study yourself" in order to learn as much as possible about rheumatic heart disease.

Awareness of heart malfunction, as mentioned previously, is apt to cause anxiety. This consequence was studied and found to fall into two groups which will be discussed separately below.

Anxiety with resultant increase in symptoms was accepted as a consequence in 5 cases. These patients (#5, 11, 13, 18, 20) felt that their nervousness in turn made their hearts

"worse." This was most obvious in the case of Mrs. H. (#13) who commented that "it sets up a vicious circle; the more you get scared the harder it (the heart) will beat."

Anxiety without increase in symptoms was present in 6 cases. Miss A. (#6) had not paid much attention to her heart earlier but when 2 weeks prior to the hospitalization it started to "beat fast and turn over" this made her worried and caused sleeplessness. Worry and sleeplessness were also present in the case of Mrs. M. (#12).

Some patients felt that their nervousness had increased since they started to "feel" their hearts. Thus Mrs. H. (#16) stated that palpitation "wears her down" and that she was brought to the point of "breaking down" when it had persisted for some time. Mr. E. (#2) had a nervous breakdown in 1948 after his first severe heart attack and he considered that it was caused by overawareness of his heart.

Fear of death was an unanticipated consequence which was present in 5 cases. When his heart "missed a beat" Mr. E (#2) "thought that it would stop and that every beat would be the last." Mrs. M. (#3) could "feel her heart beat right up in her throat" and feared that she would "choke to death." The other 3 patients (#16, 18, 23) did not express themselves so dramatically but fear of death was admitted or implied in connection with palpitation or irregularities in the rhythm of the heart beat.

Another unanticipated consequence was anxiety in relatives which occurred in 2 cases. The husband of Mrs. B. (#18) used

to get very anxious when she had heart palpitations. Mr. J. (#21) stated that his wife left the room when he had palpitations as she could not bear to see or hear his heart beat.

Low Activity Tolerance (Table VI-g, see appendix)

As expected, self-limiting results of easy fatigue and increase in symptoms upon exertion proved to be a prominent factor in the 25 cases of rheumatic fever under study. Thus this factor was present in 24 cases and accepted as having one or more consequences in all instances. In one case (#4) the low activity tolerance was mainly due to a secondary infection of subacute bacterial endocarditis. The factor was not present in one case (#22) where the patient had experienced no heart symptoms until 3 weeks prior to the present hospitalization although he had known about a heart murmur since childhood.

The consequence of limited accomplishment leading to feelings of unworthiness or guilt was present in 15 cases. Four male patients (#1, 2, 9, 21) expressed feelings of unworthiness in connection with their inability to work. One of these (#2) felt it especially "hard" that he was unable to support his family and had to receive public assistance. He feared that his children would "look down" on him when they grew old enough to understand that "Daddy is on relief." Mr. M. (#9) who had always been a hard working man found it very depressing to be unable to attend to his business and felt that he was "no good any longer" either to himself or to anybody else.

Female patients seemed to be mostly bothered by their inability to maintain high housekeeping standards or by the fact that they had to delegate the main part of their housework to other members of the family or to hired help. Feelings of unworthiness and guilt caused by this were increased in a few instances (#3, 12, 23) where the patient felt that she had been unable to take care of her children properly. Two adolescent patients (#10 and 11) expressed feelings of unworthiness because of their inability to contribute to their own support.

Dependency as a consequence existed in 8 cases. Some of the female patients disliked being physically dependant, "to be waited on" (#3 and 11), or found it more difficult than others to delegate their household duties to members of their family (#4, 5, 13).

One man (#2) and 2 adolescents (#10 and 11) mainly resented their economic dependency.

Four female patients (#3, 5, 13, 23) showed evidence of having developed an increased emotional dependence on their husbands because of their low activity tolerance.

Frustration and irritability appeared as a consequence in 8 cases. Only one patient (#20) admitted that low activity tolerance caused irritability. His comment was: "You ask people to do something for you, and they are busy so you get mad, more at yourself and what you can't do than at them." Irritability was inferred in the case of Mr. M (#9) who

felt that his inability to do anything "just burned (him) up" and who gave a general impression of being very irritable. Other patients were "upset" or "disgusted" over the fact that they got tired easily (#10 and 17) or had been unable to continue with activities they earlier had enjoyed (#12, 16, 21). Miss R. (#11) found her whole situation very "frustrating." She resented her inability to go back to school and most of all her "failure" to continue with her summer job and contribute to her own support.

Twenty-four patients felt that low activity tolerance caused restrictions of work, social and recreational activities. Restrictions of work were present in 19 cases and of social and recreational activities in 21 cases. Three patients (#17, 21, 23) had only had to restrict work activities. Others (#6, 7, 14, 19, 25) had been able to work as usual but had been forced to limit their social and recreational activities because of their low activity tolerance.

The effect of low activity tolerance on work activities ranged from complete inability to do any kind of work as in the case of Mr. G. (#1) and Mr. M. (#9) to need to change employment to a less strenuous type of work as was the case of Mr. M. (#24). Female patients were more or less unable to do their housework. Two women (#3 and 18) had had to give up employment outside of their homes and the teenaged girl (#11) had been unable to continue her summer job.

Most of the patients who expressed limitation of their

social activities as a consequence were too tired to "go out and meet people" as Mrs. B. (#5) expressed it. Mrs. D. (#4) had never learned to dance because of low activity tolerance as a girl and had always felt this as a "big handicap" in her social life."

Many patients felt that they had to abstain from participation in various recreational activities in order to avoid overtiring or increasing their heart symptoms. As examples can be mentioned giving up hunting and fishing (#1, 2, 14), traveling (#5 and 13) and bowling (#12 and 21). Mary (#7), the eleven year old girl, could not participate in physical education and was sorry that she could not "be in track."

Whereas economic stress had been anticipated in relation to required inactivity in the area of treatment it had not been included as a possible consequence under the factor of low activity tolerance. It was, however, found to be present in 4 cases. As mentioned previously in other connections, the two adolescent patients (#10 and 11) had difficulty in accepting the fact that they were unable to contribute to their own support. Two female patients (#8 and 23), who both were married to farmers, felt that their inability to assist their husbands with the chores on the farm and the need to hire help for the housework had caused economic stress.

One patient (#16) mentioned as an unanticipated consequence that her limited activity tolerance had caused interruption in the sexual relationship with her husband

because of heart pounding during intercourse. However, no marital friction had resulted so far.

Unanticipated Factors

Three unanticipated "illness" factors appeared in the area of symptomatology.

Loss of voluntary controls was present in 2 cases. One patient (#15), since her heart surgery in September 1953, had been unable to control her right arm and hand, which were described as "useless." She felt that this interfered with activities she otherwise could have done, such as writing and sewing. This was also felt as consequential by another female patient (#23) who had lost control of one arm after a "stroke" in 1953.

Loss of consciousness was present in 3 cases. This factor had precipitated the hospitalization of Mrs. H. (#13). She was quite fearful over this episode and "just did not want it to happen again." Mrs. B. (#18) had experienced loss of consciousness after a tooth extraction. The consequence of fear of death was present in this case. Another woman (#19) had lost consciousness several times when she was praying and sometimes when she was walking alone. However, she did not express any fears or other consequences.

Deformity was a factor in 2 cases. Mrs. K. (#17) believed that her heart disease made her thin. She was very

conscious of this and worried about her appearance. Although people noticed the dragging of her foot, which was an effect of the stroke in 1953, Mrs. T. (#23) said she was not concerned about this as they "were nice about it."

Treatment

The fourth and final aspect of the disease entity of rheumatic heart disease to be studied is that of treatment and management. The results of 7 factors which seem to increase social stress and to be problems for patients under treatment have been systematically recorded on separate tables. The factors and their consequences will also be discussed here in sequence.

Need for Consistent Medical Supervision (Table VII-a, see appendix)

This factor was present in all the 25 cases. However 2 patients (#17 and 24) had little concept regarding the need for medical supervision until their heart symptoms became worse. Another patient (#21) felt that doctors had not been helpful in the past and seemed to withdraw from medical supervision rather than facing them with their faults. The factor was consequential in 21 cases.

Expense was a consequence in 16 cases. In the majority of these the patient felt that expenses for medical supervision had been an additional burden on an already strained economy.

In a few cases (#3, 8, 10) the increased economic stress seemed to have been one of the main problems caused by the disease. Two patients (#2 and 14) were concerned about their inability to pay their medical debts and the necessity to accept public assistance. One female patient (#17) had not maintained consistent medical supervision because of the heavy expenses. However, the rest had continued under medical supervision despite the financial burden and Mr. G.'s (#1) comment can be mentioned as typical of this group: "A good doctor is worth his pay."

Dependence on the doctor seemed to be a consequence in 4 cases. Mrs. D. (#4) who had been under medical supervision by the same doctor for many years and felt that he "knew" her did not like to change doctor for postnatal care during her first pregnancy. Mrs. H. (#13) seemed to be very dependent on her family doctor to whom she "can go for just everything, nothing is too big or too small." This doctor lives right across the street and had recently visited the patient every day and Mr. H. stated that it was "a nice feeling to have the doctor so close." Mrs. B. (#18) expressed great faith in her private doctor, a heart specialist, who "understands" her heart. She felt that he was proud of her and expected her to take good care of herself, which she did as she did not want to "let him down." One male patient (#20) also seemed to be quite dependent on his doctor.

Four patients expressed discouragement regarding various

opinions and inconsistencies in treatment. In the case of Mr. E. (#2) different doctors had given different opinions regarding the severity of his heart disease, which had made the patient confused and increased his nervousness. Inconsistencies in recommendations, especially regarding the need for rest and medication, had increased the patient's apprehension. Mrs. B. (#5), who had consulted many doctors for her complicating skin condition, also was discouraged regarding prescriptions for medications as the medicine ordered by one doctor was considered "useless" or "too strong" by the next one. Miss R. (#11) was confused by disagreement between her local doctor and her heart specialist regarding "dating." The specialist had told her to use her own judgement and only be sure that she did not get too tired while the local doctor wanted her to consult him each time she dated, which the patient resented. Differences of opinion concerning diagnosis and treatment were also disturbing to Mrs. S. (#15) who saw several doctors before she was referred to the University Hospitals where she underwent heart surgery.

Limits in where a person could live was considered to be consequential in 2 cases. This was, however, related to vacation trips more than to permanent residence. Thus Mr. M. (#9) had cancelled a vacation trip last summer partly because he did not know "what kind of doctors they had up north." Mrs. B. (#18) would go on short trips but never for long ones due to the wish to remain near the heart specialist

who "understands" her heart.

Difficulty in communication and transportation was expressed as a consequence only in the case of Mr. E. (#2). His family doctor did not make home calls so the patient had to travel 35 to 40 miles for his check-ups. The welfare department did not pay the patient's transportation costs. Therefore Mr. E. had to borrow his brother's car which he resented as he "hated to bother" his brother.

An unanticipated consequence expressed by 7 patients was concern about the limitation of local medical care and the need for treatment by heart specialist. Three patients (#1, 15, 22) who did not feel that supervision by their local doctors was sufficient had persuaded them to refer these patients to the University Hospitals for expert medical examination. Mrs. T. (#23) changed doctor to get the help of a specialist when her heart condition became worse. Two patients (#18 and 22) continued to see their local doctors but also remained under the supervision of cardiologists. Only 2 patients directly expressed distrust of their private physicians. Mr. E. (#2) referred to his family doctor as "the little doctor at home." Mrs. M. (#3) felt that her doctor "did not seem to know the latest things, did not keep up."

Three patients wanted their doctors to give them more information regarding their disease (#2 and 11) or present condition (#14). Miss R. (#11) also felt that if more

information regarding her disease and her condition were given to her family, this would increase their understanding of her low activity tolerance. One patient (#23) felt that her doctors were sometimes too busy to permit her to discuss her worries, which she felt were related to her cardiac condition.

Need for Regular Medication (Table VII-b, see appendix)

This factor was accepted as being present in 20 cases. Consequences were denied in 6 cases. The consequence of anxiety regarding availability did not appear to be present.

Expense was accepted as a consequence in 8 cases. Mr. G. (#1) who had been on regular medication since 1950 felt that this was "quite an expense in the long run." Mrs. M. (#3) was worried over medical costs in general and felt that expenses for medicine was "an additional burden." One patient (#19) had discontinued the prescribed medication partly because the expense, partly because she questioned the need for it.

The consequence of side effects of drugs was present in the case of Mrs. B. (#5). She had developed a severe skin rash which by her doctors was believed to be due to digitalis medication. At the time of the interview the patient was more concerned about her skin rash and its remedy than about her actual heart disease.

Solicitousness of relatives seemed to be a consequence

in the case of Mrs. H. (#16). Her husband promptly threw away any medication discontinued by her doctor as he feared that she might take the wrong thing or that the medicine would get into the hands of visiting children.

Three patients felt that regular medication caused need for constant remembering of the disease. Mary (#7) and Mrs. S. (#15) easily forgot to take their medicines and often had to be reminded to do so by members of their families. Mr. J. (#21) who had been advised to take digitalis 3 years ago felt that taking medicine was a "nuisance" and that it did "no good" so he stopped taking it.

Vague anxiety connected with the need for regular medication seemed to be an unanticipated consequence in one case. Mrs. B. (#18) dreamed three times a month that she would die if she did not do something; she did not know just what but connected this with taking medicine.

Another unanticipated consequence appeared in the case of Mr. M. (#24) who found it difficult to take medicine regularly because of his irregular work hours.

Self-determination Concerning Medication and Treatment (Table VII-c, see appendix)

Self-determination in timing of amount of medication taken and in regard to decisions about surgery appeared to be a factor in 9 cases. In one instance (#19) this factor was present in both these areas.

Self-determination in regard to medication was present in 5 cases in one of which (#18) only the taking of sedatives was concerned. Mrs. V. (#19) had discontinued the prescribed digitalis "on her own" but did not feel that this had been consequential. Although Mr. S. (#20) preferred that his doctor decide the time and the amount of his medication the patient and his wife sometimes decided together this having "worked out fine." Another man (#24) took twice as much as usual if he thought he had forgotten to take his medicine the night before or if he felt worse. However, he claimed that he did not worry over this responsibility. Self-determination in regard to medication appeared to be consequential only in one case (#21).

Decisions to have surgery seemed to be based on the desire to prolong life (#9 and 23) combined with concern about children (#15 and 19). One patient (#17) had decided on surgery largely because it was recommended by her doctors but she also seemed to have other motives, such as proving to her husband that she really had something the matter with her. The factor did not seem to be consequential in these 5 cases except that Mr. M. (#9) expressed regret that he had made this decision, as he had been led by the doctors to expect more improvement than had actually taken place.

The anticipated consequence of <u>feelings of responsibility for increased symptomatology</u> did not appear to be present.

Fear of misjudgement was consequential in the case of Mr. J. (#21) who stated that he would prefer that his doctor advised him when to take medicine and how much as he distrusted his own judgement. He feared that he might not take his medicine if he thought that it was not helping him or that he did not need it. This patient had in the past discontinued digitalis on his own responsibility.

No unanticipated consequences appeared to be present.

Hospitalization (Table VII-d, see appendix)

This factor was present in 24 cases. It was not present in the case of Mr. G. (#25) who attended the cardiac out-patient clinic. One (#4) of the 24 patients was admitted to the hospital because she had developed a secondary infection of subacute bacterial endocarditis. Another patient (#7) had never been hospitalized but had spent 10 months at the convalescent home for children with rheumatic heart disease, which was considered equivalent with hospitalization. Consequences were denied only in this case. The girl had, according to her mother, adjusted "beautifully" at the convalescent home and could not remember any adverse consequences herself, which, however, might be due to the fact that 5 years had elapsed since her stay in that institution.

Expense seemed to be consequential in 14 cases. Five additional patients (#2, 11, 13, 15, 20) were admitted to the University Hospitals as "state patients" which meant

that the state and county were charged for the costs of their hospitalization as they were considered unable to meet this expense themselves. These patients, however, did not seem to be concerned about their status as public patients and for them the factor did not appear to have adverse consequences.

On the other hand hospitalization was considered to have economic consequences in 6 similar cases but where the patient was concerned over the fact that he was unable to pay his medical debts and had been forced to turn to the "county." Three of these patients (#3, 4, 8) commented that they could not "afford" any more hospital bills. One patient (#14) expressed resentment over the fact that he had to receive help from the community but "guessed" that he had to "take it." Two patients (#17 and 21) were worried about the fact that in the future they might have to "pay back" money spent for their care. In the case of Robert (#10) costs for hospitalization and medical care in general had always been a real problem as his stepfather had refused to pay for any medical care in the past. His recently divorced mother had a very limited income and also found that costs for hospitalization exceeded her means. The patient stated that his present hospitalization was urged by his family doctor who had helped him to be admitted at public expense.

Taken all together 12 patients were admitted as "state patients."

Three other patients (#1, 9, 16) felt that although

expenses for hospitalization had been heavy, they had been able to pay their hospital bills without too much sacrifice. For instance, Mrs. H. (#16) commented that "it is sometimes tough, but we manage." Costs for hospitalization were felt as a major problem in 3 cases (#18, 19, 22). Mrs. B. can be mentioned as an example. She was quite fearful of requesting public help and wondered if she could afford another hospitalization if needed.

Separation with possible disruption of normal patterns and possible loss of status in the family was a consequence in 12 cases.

Six female patients (#3, 4, 12, 17, 19, 23) who had small children felt that their hospitalization had caused dislocation of the family in the sense that their children had to be cared for by relatives, neighbors or hired help. Some of these patients and a few others were especially concerned about the effects of separation on their younger children (#3, 4, 8, 12, 13, 15). In some instances the child had never previously been separated from the mother. In other cases, such as that of Mrs. W. (#8) her 6 year old child had been disturbed by previous hospitalizations and had "stopped eating." The patient therefore anxiously wondered how the child was reacting to the current separation.

Mrs. K. (#17) expressed feelings of guilt over the fact that she was unable to give her oldest daughter a birthday party as she had promised. She also felt that her

hospitalization deprived her husband of the pleasure of going hunting, saying that her hospitalizations always seemed to occur during the hunting season.

One male patient (#14) feared that his 6 month old baby would forget him if he stayed away too long. Another man (#20) seemed to feel that his absence from the family had contributed to the death of his 80 year old father which had occurred during the patient's hospitalization, as his father had become sick once before during a similar separation.

Hospital adjustment seemed to be a consequence in 10 cases. Annoyance over the hospital routine was expressed by 4 patients. Mr. G. (#1) felt that "a patient has no privacy and not enough time for rest." He also objected to the examination by the medical students. The latter was disliked also by Mr. M. (#9) and by Robert (#10), who was tired of being "questioned over and over again." One female patient (#18) felt that "the noise and confusion" in the hospital "got her down."

Five patients were affected by the idleness during their hospitalization. They got "restless" (#24), "bored" (#20 and 22) or stated that they disliked "lying around" (#10 and 16). Two male patients "hated" to be indoors, (#21 and 22).

One patient (#2) had left the hospital against medical advice during his first hospitalization 6 years ago as he had gained the impression that he "was going to die any way."

Preconceived ideas regarding treatment was consequential

in 4 cases. Mr. G. (#1) had expected to undergo heart surgery and was disappointed that "nothing had been done." Another man (#9) had objected to certain examinations including catheterization before surgery, as he feared that these would further damage his heart. He had, however, had to "take it" as he could not afford to be treated at a private hospital where he believed that the treatment coincided with his own ideas.

Mrs. M. (#3) who had been admitted to the hospital when she came for an out-patient check-up had expected the doctors at the hospital to "do a little more as they had kept" her instead of only treating her with "shots and pills."

Mrs. T. (#23) had refused referral to a public health nurse as she feared that too much information about her emotional difficulties would be conveyed to her husband and she did not want him to know that she had "talked behind his back."

It was felt that anxiety was present in 5 cases either in regard to hospital procedures or expressed as fear of the unknown.

Two patients (#1 and 9) were afraid that examinations and interviews would be too strenuous. Mrs. M. (#12) who was observed during an intravenous transfusion appeared to be tense and fearful and needed frequent assurance from the nurses that everything connected with the transfusion was as it should be.

Fear of the unknown seemed to be present in 2 cases. Mrs. B. (#5) who had to be readmitted a few days after her first hospitalization admitted that she "prayed all the way up that she would get the same room and the same roommate as she had had before." Mr. G. (#14) stated that he was very tense and apprehensive during the first few days of his hospitalization as he did not know what would "happen to him" in the hospital.

Concrete evidence of illness possibly invoking pity was a consequence in 3 cases.

Miss A. (#6) hoped that her family would realize that she could not "take such a heavy load" when they learned that she was hospitalized. Likewise Mrs. T. (#23) believed that her hospitalization would make her husband realize that she had a serious condition and that he would appreciate her more when she returned home.

One man (#24) felt that this consequence had a negative effect as it forced him to let his boss and colleagues know that he had heart disease which he previously had tried to conceal.

The consequence of protectiveness appeared to be present in the case of Miss R. (#11) who could permit herself to be dependent in the hospital where it was "people's job to help her." At home she felt "misplaced" as her care was "just an extra thing"; an additional burden on the rest of the family.

An unanticipated factor which was expressed by 2 female

patients was guilt over postponement of medical care for another member of the family. In both these cases (#17 and 19) one of the patient's children had been recommended surgery by the local doctor which had to be postponed because of the mother's hospitalization.

Required Inactivity (Table VII-e, see appendix)

One of the main features in the treatment of rheumatic heart disease is adequate rest and restrictions of activity. The need for this coincides in many instances with the patient's low activity tolerance. However, some patients may feel that the restrictions prescribed are too rigorous and exceed the need for inactivity, which may then cause feelings of resentment and rebellion. Other patients may welcome restrictions as they feel that medical advice justifies their actual need for limited activity.

This factor seemed to be present in 18 of the 25 cases. It was not present in 7 cases. Three patients in the latter group (#6, 14, 19) had never been advised to restrict their activity. In 3 other cases (#11, 12, 18) the restrictions did not exceed the limitations which were imposed by low activity tolerance. In one case (#4) restrictions of activity were first recommended when the patient developed a secondary infection. Of the 18 cases in which the factor was present, adverse consequences were denied by only one patient (#23) who seemed to welcome restrictions put on her as justifying

her in reducing her activity.

Seven patients felt that this factor restricted their productivity which caused loss of status and feelings of unworthiness. Three of these were men (#1, 2, 9) who had been advised to stop working. Four female patients (#8, 13, 15, 17) felt that required inactivity hindered them in fulfilling their household duties. In some of these cases feelings of unworthiness or loss of status were directly expressed; in others it was implied. For example, Mr. E. (#2) admitted that he felt that people "looked down" on him as he had been living on public assistance since 1952 when his local doctor advised him to quit his job as a truck driver. Some of the female patients (#13 and 15) stated more vaguely that they "felt bad" about being forced to let their families or hired help do their housework.

Social isolation was consequential in 8 cases. The need for rest and an early bedtime hour had prevented most of these patients from participating in social life to the same degree as earlier. Robert (#10), the teenaged boy, was furthermore advised not to "play rough games" with his friends. Mary (#7) had also been admonished to avoid competitive sports. She had apparently adjusted well to her restrictions even if she resented the fact that her rest periods after school prevented her from playing with her friends as much as she desired. One patient (#9) felt that recommended precautions against respiratory infections had limited his social activities as he

could no longer "go down town and meet people."

The consequence of idleness with likelihood of despondency and feelings of futility was present in 5 cases. All these patients were men. Mr. G. (#1) and Mr. M. (#9) felt that life lost its meaning when they had to quit working. Robert (#10) found the idleness "disgusting." One man (#21) "paced the floor" when he had to sit around waiting for a job within his capacity and stated that he was "sick to death of television." Another man (#22) who had been advised to change employment felt that idleness would "get him down" if he could not find a suitable job soon.

It was felt that dependency on others was consequential in 3 cases (#3, 5, 13). These female patients felt that the need for restricted activity prevented them from doing their housework, which they had had to delegate to members of their family. They all felt the increased dependency difficult to accept.

Restrictions of activity caused resentment and frustration in 8 cases. Four male patients (#1, 9, 10, 21) resented the fact that they had been advised to stop working completely or the change to a less strenuous job (#10 and 21) which they felt was not available where they lived. Mr. G. (#1) can be mentioned as an example. He felt resentful that he had been advised to "take it easy" when he had his first severe heart attack in 1950. He was sure that he would have "felt better," if he had been permitted to take some kind of light

part-time job and believed that this would have been permitted if his first attack had occurred more recently, as doctors now realize that it is better for the morale of their heart patients if they have something to do.

Mary (#7), the eleven year old girl, resented her rest periods. Another patient (#25) stated that he objected to the prescribed bedrest when he was a teenager and so "fooled the doctor" by not staying in bed as he was supposed to do. Mr. M. (#24) resented the required inactivity when he felt well and had, for the most part, neglected to follow medical recommendations. Mrs. B. (#5) had been advised to live a sedentary life and stop traveling with her husband. She deeply resented this recommendation as neither she nor her husband, who had given up his job following her heart attack in May 1945, were "satisfied with the life we lead now."

Six patients felt that this factor caused a more or less severe financial problem. As mentioned earlier, Mr. E. (#2) had been living on public assistance since he was advised by his doctor to give up his job in 1952. Three male patients (#1, 9, 22) felt that although no severe economic problem existed, they had been forced to lower their standards of living when they were advised to quit or change jobs. Two female patients (#3 and 5) felt that their husbands' earning capacity had been reduced because they had had to take time off to care for their sick wives.

An unanticipated consequence of required inactivity

appeared to be that some patients tended to over-restrict themselves. This occurred in 4 instances (#15, 16, 20, 25). One of these patients (#20) had during the first year of his illness defied medical recommendations with the result that he became worse. He had now "learned the lesson" and was fearful of doing even as much as his doctors allowed. Mrs. S. (#15) had tended to over-restrict herself after heart surgery in September 1953, as she feared that her heart would not stand "hardly anything."

Dietary Limitations (Table VII-f, see appendix)

This factor appeared to be present in 18 cases. Nine patients had been dieting because of their heart conditions for some time prior to the time of the interview; 5 others (#4, 16, 18, 22, 25) had only dieted briefly in the past. One of these (#22) and another patient (#23) had had a diet recommended for the future. The same would probably be the case in 2 instances (#13 and 17) where a diet had first been prescribed during the current hospitalization. Drinking limitations but no diet were recommended in case #2.

Elimination or limitations of salt was prescribed in the majority of the 18 cases. Three patients (#16, 18, 24) had, however, been using substitute salt and did not feel that dieting was a problem. Three patients (#4, 16, 25) had been following low calorie diets.

Although 18 patients had had some diet recommended,

there appeared to be no adverse consequences for 8 of them. The other 10 verbalized problems included in the following discussion.

The consequences of feelings of difference, being treated differently by others, dependency on others, interference with school and work, social limitation, and physical discomfort were not present.

One patient (#3) found that expense was a consequence of her need for diet as she had to buy special bread and butter.

Inability to be flexible in taking meals out was consequential in 2 instances. Mr. G. (#1) felt that it was difficult to get salt-free food at restaurants and Mrs. M. (#12) had the same experience. It was especially difficult for the latter as she often travelled with her husband and had to eat away from home.

The most prominent consequence caused by this factor was that it eliminated satisfaction from indiscriminate eating and drinking. This was expressed by 9 patients. In the case of Mr. E. (#2) the consequence was related to limitations of beer drinking which the patient "kind of missed." Five patients who had been on a salt-free diet commented on the taste as "flat," "awful" and the like. Mrs. S. (#15) had not kept her diet as she "just loves salt." Mrs. M. (#12) had also tended to neglect her diet as she liked southern food which she previously had enjoyed on her travels and which

she had difficulty in resisting. Mr. M. (#22) who would have to be on a diet in the future hoped that it would turn out better than his previous experience of dieting at which time he got "ugly as the dickens all the time."

One unanticipated consequence was present in the case of Mrs. S. (#15) who felt that the preparation of her diet caused an extra amount of work.

Smoking Limitations (Table VII-g, see appendix)

Smoking limitations had been recommended in 6 cases. In the rest of the 25 cases 3 patients had reduced or limited their smoking on their own (#10 and 25) or never started to smoke (#11) as they felt that smoking would not be "good for the heart." One patient (#16) had once been advised to stop smoking by her family doctor, but started again after one week as she seemed to have no ill effects and her doctor did not comment on her resumption of smoking. Another female patient (#15) stopped smoking for a few months as she believed that her cough would disappear if she did so. However, she started again when her condition did not improve. Mr. M. (#22) believed that he would have to quit smoking in the future, which he feared would be hard as he enjoyed it. No smoking restrictions were present in the case of Mr. M. (#24) who was a moderate smoker. Seven patients stated that they did not smoke anyway so this factor had never been a problem.

In 2 of the cases (#1 and 20) where the amount of smoking was limited on medical recommendation the patients said they had never wanted to smoke more than moderately anyway.

Four patients felt that this factor limited a source of relaxation. Mr. M. (#9) found it more difficult to relax without a cigarette. Mrs. M. (#12) missed "the lift" it gave. Two other female patients (#17 and 18) missed smoking as it calmed their nerves. Mrs. B. (#18) could not resist "sneaking" a cigarette now and then when she was nervous.

The factor of inhibition of social participation seemed to be consequential in the case of Mrs. B. (#18), who smoked when she wanted to be "sociable."

No unanticipated consequences were present.

Unanticipated Factors

Two unanticipated "illness" factors appeared in the area of management and treatment.

Painful treatment occurred in 5 cases. Four of these patients (#9, 15, 19, 23) had undergone heart surgery and one patient (#17) expected to do so in the near future.

Mrs. V. (#19) "suffered" but felt that it was "God's will." Mrs. K. (#17) discussed surgery only as something following which she would not "look pretty." Mrs. T. (#23) had now forgotten the pain, but she would have advised other patients against surgery if they had asked her immediately after her operation. Two patients (#9 and 15) expressed as

the only consequence their disappointment that their conditions had not improved as a result of surgery.

Use of appliance was a factor in the case of Mrs. M. (#3). She had refused to let her husband buy her a portable wheelchair to enable her to be more sociable as she did not want to expose herself to people's curiosity. She also resented being treated as an invalid.

CHAPTER VI

CONCLUSIONS AND RECOMMENDATIONS

An attempt has been made to evaluate the validity of 17 suggested "factors" which were thought to increase or precipitate social and emotional stress in persons who are chronically ill due to rheumatic heart disease. In doing this the factors have been grouped into the four areas of public attitudes, etiology, symptomatology, and treatment. The occurrence of the anticipated factors in a random sample of 25 cases have been determined and an impression of the general types of problems (consequences) that were precipitated or aggravated has been obtained. The conclusions regarding this will be given below.

Conclusions

Table VIII (see page 146) is a master chart of the anticipated stressful factors which were considered in this study concerning rheumatic heart disease. Five additional factors are included in this table, 3 in the area of symptomatology, these being "loss of voluntary control," "loss of consciousness," and "deformity" and 2 in the area of treatment, these being "painful treatment" and "use of appliance." These 5 factors were not anticipated in connection with rheumatic

Table VIII. Master Table of Findings (Factors)

Case Number	PUBLIC ATTITUDES	ETIOLOGY		SYMPTOMATOLOGY											TREATMENT							TOTALS
	Anxiety	Hereditary Tendency	Neglect in care	Chronicity	Unpredictability	Progressive Severity	Lack of External Evidence	Persistent Pain	Awareness of Visceral Dysfunction	Low Activity Tolerance	Loss of Voluntary Control	Loss of Consciousness	Deformity	Consistent Medical Supervision	Regular Medication	Self-determination	Hospitalization	Required Inactivity	Dietary Limitations	Smoking Limitations	Painful Treatment	Use of Appliance	
1			x	x	x	x	x	x	x	x				x	x			x		x			14
2	x	x	x	x	x	x	x	x	x	x				x	x			x	x			x	15
3	x	x	x	x	x	x	x		x	x				x	x			x					14
4	x	x	x	x	x	x	x		x	x				x	x			x					13
5				x	x	x	x	x	x	x				x	x			x					11
6	x		x	x	x	x	x		x	x				x									10
7	x	x	x	x	x	x	x	x	x	x				x	x			x					12
8			x	x	x	x	x		x	x				x	x			x					12
9	x		x	x	x	x	x		x	x				x	x	x		x	x	x	x		16
10	x	x	x	x	x	x	x	x	x	x				x	x			x					14
11	x			x	x	x	x	x	x	x				x	x			x					12
12		x	x	x	x	x	x		x	x				x	x			x	x	x			13
13			x	x	x	x	x		x	x		x		x	x								13
14	x			x	x	x	x			x	x			x	x		x						8
15		x		x	x	x	x	x		x				x	x	x		x					16
16	x			x	x	x	x		x	x			x	x	x			x					14
17			x	x	x	x	x		x	x		x		x	x	x		x					15
18	x	x	x	x	x	x	x		x	x		x		x	x	x		x					16
19		x	x	x	x	x	x	x		x		x		x	x	x		x					14
20		x	x	x	x	x	x	x	x	x				x	x	x		x					16
21			x	x	x	x	x		x	x				x	x	x		x					12
22		x	x	x	x	x	x		x	x				x	x	x		x					10
23		x	x	x		x	x		x	x	x		x	x	x	x		x			x		16
24	x		x	x		x	x	x	x	x				x				x					14
25	x		x	x	x	x	x	x	x	x				x				x					12
	13	12	21	25	23	24	25	12	20	24	2	3	2	25	20	9	24	18	18	6	5	1	332

heart disease, although they were expected to occur in the other segments of the larger study concerning the four chronic diseases of rheumatic heart disease, epilepsy, diabetes and rheumatoid arthritis. These unanticipated factors occurred in a total of 7 instances in the area of symptomatology and 6 times in the area of treatment.

It can be noted from the master chart that 10 of the 17 anticipated factors were present in at least 20 or more of the 25 cases. Three of these factors, these being "chronicity," "lack of external evidence," and "need for consistent medical supervision" were present in all 25 cases. Three others, "progressive severity," "low activity tolerance," and "hospitalization" were present in 24 instances. Only 4 factors were present in less than one half of the cases, these being "hereditary tendency" and "persistent pain," both of which appeared in 12 cases, "self-determination" (in treatment) which appeared in 9 cases and "smoking limitations" which occurred only in 6 cases. The factor of "anxiety" in the area of public attitudes was evident in 13 cases. The 2 remaining factors each appeared 18 times in the case sample.

This over-all high incidence would suggest that the designated factors actually appeared in the disease under study.

In general it was felt that of the 4 factor areas; namely, public attitudes, etiology, symptomatology and treatment, which were suggested for study, the area of <u>public attitudes</u>

was least valid for this particular segment of the larger study. Although the anticipated factor of "anxiety" for the patient was present in 13 cases and accepted as having consequences, in all these instances this factor did not seem to be a source of severe social and emotional stress. Some oversolicitude and overconcern from "the public" existed and there was some tendency on the part of the patient to conceal his disease from persons other than the immediate family. But none of these patients had actually experienced social repulsion or had tended to withdraw from social contacts because of feelings of rejection. On the contrary, the majority of the 25 patients felt that people had been sympathetic, understanding, and helpful.

When considering etiology it was found that the consequences precipitated by the hereditary tendency of rheumatic heart disease were minimal. The majority of the 25 patients either were unaware of this aspect of their disease, or they had accepted it without much concern. However, a few females (4 in all) were aware of the possibility that their children might develop rheumatic heart disease. Although these women were determined to be alert for any signs of the disease, there was no evidence that this factor had caused feelings of guilt or overprotection.

The anticipated factor of "neglect in care," on the contrary, seemed to be a source of stress as it was accepted as present in the majority of the cases in the group (21 in

all) and as having one or more consequences in all these instances. However, only a few patients expressed feelings of guilt and self-condemnation. Blame of others was more frequent. Some patients considered that their families had neglected to provide adequate medical care at the time of their first attacks of rheumatic fever, or they blamed their parents for lack of understanding of the disease and its consequences. Others were critical towards the physician who had attended them at that time and felt that their heart conditions could have been prevented if adequate treatment had been instigated. Still others felt that no specific doctor could be blamed since the medical profession in general had only recently gained adequate knowledge of rheumatic fever and its tendency to leave permanent heart damage.

The most prominent factor in the area of symptomatology seemed to be "progressive severity" which was present for 24 patients each of whom reported the presence of consequences totalling 78 in the whole group. (See table IX in appendix) The majority of these patients were experiencing an increased dependency on relatives, friends, and community and increased difficulty in maintaining control over various life situations. The progressive severity of symptoms in many cases caused fear of death, and surgery was in several instances accepted or wanted by the patient in the hope that it would stop the "down-hill" course of his illness. As in the area of etiology, many patients blamed themselves, their families or their

doctors as they believed that neglect in care had contributed to increase in symptoms. It was, however, interesting to note that self-blame with consequent feelings of guilt was much more prominent in the area of symptomatology than in the area of etiology, as more than one half of the patients in the group felt that the increase in symptoms was due to their own neglect in following medical recommendations.

"Low activity tolerance" was another symptom factor which was found to be prominent as it was accepted as being present in 24 instances and had precipitated a total of 60 consequences. All these patients felt that this factor had restricted their ability to work and also their social activities. The limited accomplishment tended to cause feelings of unworthiness or guilt in the majority of these cases and also made some patients feel frustrated. Increased dependency on others was also a consequence in some cases (8 in all).

The third prominent factor in the area of symptomatology appeared to be "chronicity" which was accepted by all 25 patients as having adverse consequences, the total number of these being 53. The factor had at one time or another caused feelings of discouragement and depression in all but one of the patients, although most of them at the time of the interview seemed to be fairly well adjusted to the chronic aspect of their disease. Economic stress appeared to be another important consequence as many patients (19 in all) expressed

concern about their financial situations, or felt that their standards of living had had to be lowered because of on-going medical expenses, loss or change of employment, and need to hire help for housework and other chores.

The other four of the anticipated factors in the area of symptomatology seemed to be of somewhat less importance compared with those just discussed.

The factor of "unpredictability of increase in symptoms" was present in 23 cases and had caused a total number of 34 consequences. A constant fear of attack, which in some instances had led to fear of death, seemed to be the most prominent consequence caused by this factor. It also seemed to create anxiety and worry on the part of the patient's relatives, which in a few cases had led to overprotection of the patient. Although the total number of consequences was relatively low, it can generally be said that when this factor did have consequences, they exerted a strong influence upon the patient's life.

The factor of "awareness of visceral dysfunction" also seemed to be anxiety-producing and tended to make the patient overly concerned about his heart symptoms. In a few cases fear of death was caused by awareness of palpitation and irregularities in the rhythm of the heart beat. However, adverse consequences were denied in 5 of the 20 cases where the factor was present.

Likewise, consequences of the factor "lack of external

evidence" were denied in 11 cases although it was accepted as present by all the patients in the group. The remainder of these had experienced difficulties in explaining their disease or had found that members of their families and others had showed lack of understanding of the need for limitations of activity or expensive medical treatment. Some patients had also been suspected of malignering. However, only a few had attempted to deny their limitations and to participate in "normal" activities above their physical ability.

The least important factor in the area of symptomatology seemed to be "persistent pain." More than one half of the patients had not experienced any pain at all. Others had suffered pain on exertion or only temporarily. Only 3 patients felt that pain had caused any adverse consequences, these being irritability on their own part and anxiety on the part of their relatives.

When considering the area of <u>treatment and management</u>, it was found that the dominating problem was on-going expenses for medical care. Thus this consequence was the most prominent one caused by the three factors of "hospitalization," "need for consistent medical supervision," and "regular medication." Even the factor of "required inactivity" had caused a financial problem as some patients (6 in all) felt that this factor had reduced their earning capacity and forced them to lower their standards of living.

Almost one half of the patients in the group had been

unable to meet the expenses for the current hospitalization. In some instances the patient seemed to have accepted this without much concern. Other patients had developed feelings of unworthiness and shame and some were worried about the possibility that in the future they might have to pay back money spent for their care. It can generally be said that most patients felt the costs for hospitalization as a heavy economic burden. Hospitalization also tended to cause dislocations within the family which seemed to be especially disturbing to female patients who tended to worry about their younger children and the possible adverse effects of separation on them. A number of patients had difficulty in adjusting to the idleness in the hospital; others were annoyed over the hospital routine or feared that examinations and interviews would be too strenuous. A few patients were disappointed that they had not received the kind of treatment they had expected. Taken all together this factor had caused a total number of 51 consequences.

When considering the number of consequences, the factor of "required inactivity" seemed to be the second factor of importance in the area of treatment. It was present in 18 cases and had caused a total of 41 consequences. Some patients felt that this factor restricted their productivity which had caused feelings of unworthiness and loss of status. The financial problem has already been mentioned. The need for rest and an early bedtime hour and the necessity to avoid

strenuous activities had in about one third of the case sample forced the patients to limit their social activities. About the same number of patients resented the need for restrictions of activity or the medical recommendation to lead a sedentary life. The idleness caused by this factor was especially disliked by some male patients.

The factor of "need for consistent medical supervision" was present in all the 25 cases and accepted as having a total of 38 consequences. As mentioned earlier, expenses for medical care seemed to be the main problem and compared with this consequence others seemed to be of relatively little importance. However, a few patients were discouraged because of various opinions and inconsistencies in treatment. Some over-dependence on the doctor seemed to exist in a few other cases. Concern about the limitations of local medical care and the need for treatment by a heart specialist appeared to be an unanticipated consequence caused by this factor.

Although present in 20 cases, the factor of "need for regular medication" did not appear to be an important source of stress. Adverse consequences were denied in 6 cases. In the remaining 14 cases a total of 16 consequences were present, one half of which was concern about the expenses for medications.

The factor of "dietary limitations" seemed to be more stressful although the total number of consequences was only 13. The main consequence caused by this factor was that it

eliminated satisfaction from indiscriminate eating and drinking. A number of patients especially disliked the taste of the salt-free food.

Smoking limitations which were required in only 6 cases had caused a total of 5 consequences. The majority of these patients felt that this factor eliminated a source of relaxation. Only one patient felt that it inhibited social participation.

The least important factor in the area of treatment was found to be that of "self-determination" in timing and amount of medication taken or in regard to decisions concerning surgery. Although it was present in 9 cases, it was consequential only in one instance, this being fear of misjudgement in regard to taking of medications.

This evaluation of the suggested illness factors in the chronic disease of rheumatic heart disease would indicate that among the 25 patients under study the factors in the area of symptomatology seemed to be more stressful than those in the other selected areas. It is also felt that the area of public attitudes is of less importance than the others when patients with rheumatic heart disease are concerned. However, the validity of a quantitative evaluation might be questioned as this does not indicate the degree of severity of the problems (consequences) caused by each factor. A qualitative measurement of the severity of each consequence would make an evaluation considerably more valid, but the way in which this

study has been carried out does not provide for such an evaluation.

It is also possible that many of the most important emotional problems were never expressed by the patient, due to unfavorable circumstances in the interview situation such as lack of adequate privacy. More pertinent material might also have been elicited if repeated interviews could have been arranged giving the interviewer an opportunity to establish a better relationship with each patient.

An attempt has been made to determine possible correlations between the total number of reported adverse consequences and the patient's age, sex, occupation, the degree of severity of symptoms, the length of time since the onset of symptoms, and the patient's emotional status. In order to do so, the five patients having the largest number of total consequences (Group I) were compared with the five having the least number of total consequences (Group II).

The result is shown in the table on page 157.

Although the material has not been evaluated statistically and the number of cases limits the validity of findings, it may be appropriate to observe that this table indicates that there seems to be a relationship between the length of time during which the patient has experienced cardiac symptoms and the amount of social and emotional stress which is expressed in terms of adverse effects (consequences) caused by his disease. The average length of time since the onset of symptoms

Table X. Correlation between Number of Consequences and Other Characteristics

Total number of consequences	Case number	Age	Sex	Occupation	Degree of severity	Length of time in years	Emotional stability
				Group I			
30	2	38	M	Truck driver	F.C. I	8 - 15	Cardiac neurosis
30	9	48	M	Businessman	F.C. IV	8 - 15	Stable until onset of symptoms
28	3	40	F	Housewife	F.C. III	0 - 2	Stable until onset of symptoms
26	10	17	M	None	F.C. II	8 - 15	Anxiety reaction
25	11	19	F	High school student	F.C. III	2 - 8	Good
				Group II			
8	7	11	F	Student	F.C. I	2 - 8	Good
12	14	33	M	Farmer	F.C. IV	0 - 2	Good
14	6	47	F	Cashier	F.C. III	0 - 2	Good
14	24	35	M	Bartender	F.C. II	8 - 15	Good
14	25	30	M	Scientist	F.C. I	2 - 8	Stable until onset of symptoms

is found to be longer in Group I than in Group II. Likewise there seemed to be a relationship between the patient's emotional stability and the number of consequences, as the patients having less consequences seemed to be more stable emotionally than those in Group I who had a higher number of consequences. However, this relationship may be coincidental. Concerning age it is interesting to note that the two teenaged patients are both found in Group I. There did not appear to be any correlation between the number of consequences and the degree of severity of the illness, the sex, or the usual occupation of the patients.

The responsibility for gathering information in this study has been shared between the student and a professional social worker. Cases #1 to 15 were interviewed by the student and cases #16 to 25 were interviewed by the professional social worker. An attempt has been made to determine if there are any noticeable discrepancies in the quality and quantity of material elicited in these two groups. By looking at the master chart (table VIII, see page 146) it can be seen that in all but one factor, this being "self-determination," there are no obvious differences in the frequency of factors present in the two groups. The lower incidence of this factor in the group interviewed by the student may be due partly to actual differences in the case sample, as it was frequently related to decisions concerning surgery, and partly due to misunderstanding on the part of the student concerning the meaning of

this factor. Thus adequate information regarding the timing and amount of medication taken might not have been obtained by the student in cases #1 to 15. However, it can be noted from table VII-c (see appendix) concerning "self-determination" that this factor, although present in 7 cases interviewed by the professional social worker, was consequential only in one instance. When looking at the total number of consequences present for each patient there did not seem to be any relevant differences between the cases interviewed by the student and the balance of the case sample.

Recommendations

Findings from even this limited study might justify a few recommendations for those participating in the medical and social treatment of persons with rheumatic heart disease.

A notable number of the 25 patients were concerned about the possibility that neglect in care had contributed to the onset of their disease. It is therefore felt that some discussion of this with the patient might be helpful in relieving feelings of anxiety, hostility or bitterness.

Some patients directly expressed a desire for more information from their doctors concerning the disease as such and also regarding their own condition. It is felt that such information given in simple and easily understandable terms might help to alleviate much anxiety regarding cardiac symptoms and bring about a more realistic attitude towards prognosis.

Many patients who blamed themselves for the progressive severity of their condition would probably also benefit by a discussion of their feelings of self condemnation and guilt.

One of the prominent problems caused by this disease appears to be economic stress due partly to reduced earning power partly to heavy medical expenses. Recognition by the patients of the anticipated expense and encouragement to obtain financial assistance, when necessary, through local resources, might help to relieve the financial burden of the illness. Some patients who may be reluctant to accept public assistance might benefit by a thorough discussion of their feelings about this and also be assured of the doctor's concern for them regardless of their economic status.

The data have revealed that a number of patients were worried about vocational plans and it is felt that a more extensive use of vocational rehabilitation services would be beneficial for the patients, especially for the younger ones.

For many patients with rheumatic heart disease, periods of hospitalization are relatively short and provide only brief contact with hospital personnel. Although proper concern for the patient's social and emotional problems is of utmost importance during these intervals when the illness may be in an acute stage, it would seem even more important that these aspects be handled effectively by the patient's family doctor and home community. It is therefore recommended that effort be continued to bring to the attention of all general

practitioners, public health nurses, and welfare workers this important area in the management of rheumatic heart disease in order that social and emotional stress be kept at a minimum, and where it is unavoidable, to provide that the patient and his family be given help with the resulting problems.

A few recommendations may also be appropriate in regard to the patient's hospital experience. Much anxiety might be avoided if he could be provided with more information regarding the type of examinations and treatment he might expect. Likewise, simple explanations of the hospital routine, especially at the time of the first admission might prevent some of the fear of the unknown which many patients experience. Information obtained in this study also revealed that a number of patients had difficulty in adjusting to idleness in the hospital. It is therefore felt that some suitable form of occupational therapy would facilitate the hospital adjustment of patients with heart disease and divert them from concentrating on their symptoms or other problems caused by their disease.

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APPENDIX

TABLE IV. PUBLIC ATTITUDES - ANXIETY

Case number	Not present	Present	Consequences denied	Consequences			
				Over solicitousness	Pessimism concerning prognosis	Social "ostracism"	Others
1	x						
2		x				x	
3		x		x		x	
4		x			x	x	
5	x						
6		x				x	
7		x		x			
8	x						
9		x				x	
10		x		x		x	
11		x		x	x		
12	x						
13	x						
14		x				x	
15	x						
16		x		x		x	
17	x						
18		x		x		x	
19	x						
20	x						
21	x						
22	x						
23	x						
24		x		x		x	
25		x		x		x	
	12	13	0	8	2	11	0

TABLE V-a. HEREDITARY TENDENCY

Case number	Not present	Present	Consequences denied	Consequences			
				Fear of marriage	Fear of having children	Fear for children	Others
1	x						
2		x	x				
3		x	x				
4		x		x		x	
5	x						
6	x						
7		x			x		
8	x						
9	x						
10		x	x				
11	x						
12		x				x	
13	x						
14	x						
15		x	x				
16	x						
17	x						
18		x	x				
19		x	x				
20		x	x				
21	x						
22		x	x				
23		x				x	
24	x						
25	x						
	13	12	8	1	1	3	0

TABLE V-b. NEGLECT IN CARE

Case number	Not present	Present	Consequences denied	Consequences			
				Blame and self blame with guilt	Hostility toward M.D.	Blame of inadequacy of medicine	Others
1		x					Exposures during the War
2		x		x			
3	x						
4		x			x		
5	x						
6		x		x	x		
7		x		x			
8		x				x	
9		x				x	
10		x		x			
11	x						
12		x			x		
13		x				x	
14	x						
15		x			x		
16		x		x			
17		x		x			
18		x				x	
19		x		x		x	
20		x				x	
21		x		x	x	x	
22		x				x	
23		x		x			
24		x			x		
25		x		x	x		
	4	21	0	10	7	8	1

TABLE VI-a. CHRONICITY

Case number	Not present	Present	Consequence denied	Consequences: Over-protection by family	Economic	Lack of motivation	Shopping for cures	Discouragement and depression	Others
1		x			x		x	x	
2		x			x			x	
3		x		x	x			x	
4		x			x			x	-- Future condition "up to the Lord"
5		x		x			x*	x	
6		x						x	
7		x						x	
8		x			x			x	
9		x			x			x	
10		x		x	x	x		x	
11		x			x			x	
12		x			x			x	
13		x		x	x			x	
14		x			x			x	
15		x						x	
16		x			x			x	
17		x			x			x	
18		x			x			x	
19		x			x			x	-- Prayed for "healing" but "cure" up to God
20		x			x	x		x	
21		x			x			x	
22		x			x				
23		x			x			x	
24		x						x	
25		x						x	
	0	25	0	4	19	2	2	24	2

* For complicating disease.

TABLE VI-b. UNPREDICTABILITY OF INCREASE IN SYMPTOMS

Case number	Not present	Present	Consequences						
			Conse-quences denied	Limits in social par-ticipation	Interference with job	Constant fear of attack	Anxiety on the part of relatives	Fear of death	Others
1		x			x				
2		x		x	x	x	x	x	
3		x				x	x	x	
4		x					x		
5		x				x	x		
6		x				x			
7		x	x						
8		x				x			
9		x		x		x			
10		x					x		
11		x			x				
12		x	x						
13		x				x	x		
14		x					x		
15		x				x		x	
16		x				x			
17		x				x		x	
18		x			x	x		x	
19		x				x			
20		x			x				
21		x	x						
22		x					x		
23	x								
24	x								
25		x				x		x	
	2	23	3	2	5	13	8	6	0

TABLE VI-c. PROGRESSIVE SEVERITY

Case number	Not present	Present	Consequences denied	Consequences: Increased maladjustment	Discouragement	Irritability	Fear of death	Desperate seeking medical care	Futility	Surgery to stop "downhill" course	Blame of self or others	Blame of M.D.
1		x		x				x		x	x	
2		x		x							x	x
3		x		x			x			x		x
4		x		x*			x				x	
5		x		x							x	
6		x		x	x						x	
7	x											
8		x		x							x	
9		x		x	x	x	x		x	x	x	x
10		x									x	
11		x		x	x						x	
12		x		x							x	x
13		x		x								
14		x		x								x
15		x		x	x		x	x		x	x	x
16		x		x			x					
17		x		x						x		
18		x		x			x					
19		x					x			x		
20		x		x			x			x	x	
21		x		x*			x				x	x
22		x		x			x					x
23		x		x			x			x	x	x
24		x					x			x	x	x
25		x		x			x			x		x
	1	24	0	21	4	1	13	2	1	10	15	11

*In these cases the increased maladjustment was due mainly to a secondary infection, subacute bacterial endocarditis, superimposed on previous heart disease.

TABLE VI-d. LACK OF EXTERNAL EVIDENCE OF THE DISEASE

Case number	Not present	Present	Consequences denied	Consequences: Harder to explain disease	Consequences: Harder to justify limited activity	Consequences: Lack of secondary gain	Consequences: Suspected of malingering	Consequences: Attempts to be normal and deny limitations	Consequences: Others
1		x	x						
2		x					x	x	
3		x	x						
4		x	x						
5		x	x						
6		x		x		x		x	
7		x	x						
8		x		x	x		x		
9		x	x						
10		x		x	x		x	x	
11		x		x	x		x	x	
12		x			x				
13		x			x				
14		x	x						
15		x	x						
16		x	x						
17		x		x			x		
18		x	x						
19		x		x					
20		x					x		
21		x			x		x		
22		x						x	
23		x		x	x				
24		x						x	
25		x	x						
		25	11	7	7	1	7	6	0

TABLE VI-e. PERSISTENT PAIN

Case number	Not present	Present	Consequences denied	Consequences	
				Irritability	Others
1		x		x	
2		x	x		
3	x				
4	x				
5		x		x	Anxiety in relatives
6	x				
7		x	x		
8	x				
9	x				
10		x	x		
11		x	x		
12	x				
13	x				
14	x				
15		x	x		
16		x		x	
17	x				
18	x				
19		x	x		
20		x	x		
21	x				
22	x				
23	x				
24		x	x		
25		x	x		
	13	12	9	3	1

TABLE VI-f. AWARENESS OF VISCERAL DYSFUNCTION

Case number	Not present	Present	Consequence denied	Consequences: Constant concern about symptoms	Preoccupation with organ involved	Anxiety	Fear of death	Others
1		x	x					
2		x		x		x	x	
3		x			x		x	
4		x	x					
5		x		x		x		
6		x				x		
7	x							
8		x	x					
9		x		x				
10		x		x				
11		x		x		x		
12		x		x		x		
13		x		x		x		
14	x							
15	x							
16		x		x		x	x	
17		x		x		x		
18		x		x		x	x	-- Anxiety in relatives
19	x							
20		x		x		x		
21		x		x				-- Anxiety in relatives
22	x							
23		x				x	x	
24		x	x					
25		x	x					
	5	20	5	12	1	11	5	2

TABLE VI-g. LOW ACTIVITY TOLERANCE

Case number	Not present	Present	Consequences denied	Consequences: Limited accomplishment unworthiness or guilt	Consequences: Dependance	Consequences: Frustration and irritability	Consequences: Restricts work and social life	Consequences: Others
1		x		x			x	
2		x		x	x		x	
3		x		x	x		x	
4		x		x*	x*		x	
5		x		x	x		x	
6		x					x	
7		x					x	
8		x		x			x	Economic stress
9		x		x		x	x	
10		x		x	x	x	x	Economic stress
11		x		x	x	x	x	Economic stress
12		x		x		x	x	
13		x		x	x		x	
14		x					x	
15		x		x			x	
16		x				x	x	-- Sexual relationship interrupted
17		x		x		x	x	
18		x					x	
19		x					x	
20		x				x	x	
21		x		x		x	x	
22	x							
23		x		x	x		x	Economic stress
24		x					x	
25		x					x	
	1	24	0	15	8	8	24	5

*Mainly due to secondary infection of subacute bacterial endocarditis.

TABLE VII-a. NEED FOR CONSISTENT MEDICAL SUPERVISION

Case number	Not present	Present	Consequence denied	Consequences: Expense	Dependance on M.D.	Discouragement re: inconsistencies	Limits in where person lives	Communication and transportation	Limitation of local medical care	Others
1		x		x					x	
2		x		x		x		x	x	-- Wants M.D. to give
3		x		x					x	more information
4		x		x	x					
5		x				x*				
6		x	x							
7		x	x							
8		x		x						
9		x		x			x			
10		x		x						
11		x		x		x				-- Wants M.D. to give
12		x		x						more information
13		x		x	x					
14		x		x						-- Wants M.D. to give
15		x				x			x	more information
16		x		x						
17		x		x						
18		x			x		x		x	
19		x		x						
20		x			x					
21		x		x						
22		x							x	
23		x		x					x	-- Doctors too busy
24		x	x							to listen to
25		x	x							problems
	0	25	4	16	4	4	2	1	7	4

* In regard to complicating disease.

TABLE VII-b. NEED FOR REGULAR MEDICATION

Case number	Not present	Present	Consequences							
			Conse-quence denied	Expense	Side-effects of drugs	Fear for over- or under-dose	Solici-tousness of rela-tives	Need for constant remember-ing of disease	Others	
1		x		x						
2		x	x							
3		x		x		x				
4		x		x						
5		x			x					
6	x									
7		x						x		
8		x	x							
9		x	x							
10		x		x						
11		x		x						
12		x		x						
13		x	x							
14	x									
15		x						x		
16		x					x			
17	x									
18		x		x					--	Vague anxiety connected with medication
19		x		x						
20		x	x							
21		x						x		
22	x									
23		x	x							
24		x							--	Difficult to take medicine regularly due to irregular work hours
25	x									
	5	20	6	8	1	1	1	3	2	

TABLE VII-c. SELF-DETERMINATION CONCERNING MEDICATION AND TREATMENT

Case number	Not present	Present	Consequences denied	Consequences	
				Fear of misjudgement	Others
1	x				
2	x				
3	x				
4	x				
5	x				
6	x				
7	x				
8	x				
9		x	x		
10	x				
11	x				
12	x				
13	x				
14	x				
15		x	x		
16	x				
17		x	x		
18		x	x		
19		x	x		
20		x	x		
21		x		x	
22	x				
23		x	x		
24		x	x		
25	x				
	16	9	8	1	0

TABLE VII-d. HOSPITALIZATION

Case number	Not present	Present	Consequences denied	Consequences: Expense	Separation; disruption of normal patterns	Consequences: Hospital adjustment	Consequences: Preconceived ideas	Consequences: Anxiety	Consequences: Concrete evidence of illness	Consequences: Protective setting	Consequences: Others
1		x		x		x	x	x			
2		x				x					
3		x		x	x		x				
4		x*		x*	x*						
5		x									
6		x						x			
7		x	x						x		
8		x		x	x						
9		x		x							
10		x		x		x	x	x			
11		x				x					
12		x								x	
13		x			x			x			
14		x			x						
15		x		x	x			x			
16		x			x						
17		x		x		x					
18		x		x	x						
19		x		x		x					**
20		x		x	x						
21		x			x	x					**
22		x		x		x					
23		x		x	x	x					
24		x		x	x		x		x		
25	x					x			x		
	1	24	1	14	12	10	4	5	3	1	2

* For secondary infection of subacute bacterial endocarditis.
** Guilt over postponement of medical care for another member of the family.

TABLE VII-e. REQUIRED INACTIVITY

Case number	Not present	Present	Consequence denied	Consequences: Restricts productivity -unworthiness loss of status	Social isolation	Idleness causes despondency futility	Dependance on others	Frustration	Financial problem	Others
1		x		x	x	x		x	x	
2		x		x					x	
3		x					x		x	
4	x									
5		x			x		x	x	x	
6	x									
7		x			x			x		
8		x		x						
9		x		x	x	x		x	x	
10		x			x	x		x		
11	x									
12	x									
13		x		x	x		x			
14	x									
15		x		x	x					*
16		x								*
17		x		x						
18	x									
19	x									
20		x								*
21		x				x		x		
22		x			x	x			x	
23		x	x							
24		x						x		
25		x						x		*
	7	18	1	7	8	5	3	8	6	4

* Over-restriction

TABLE VII-f. DIETARY LIMITATIONS

Case number	Not present	Present	Consequences denied	Consequences: Expense	Consequences: Inability to be flexible in taking meals out	Consequences: Eliminates satisfaction from indiscriminate eating and drinking	Consequences: Others
1		x			x		
2		x				x	
3		x		x		x	
4		x				x	
5	x						
6	x						
7	x						
8		x	x				
9		x				x	
10	x						
11		x				x	
12		x			x	x	
13		x	x				
14	x						
15		x				x	--
16		x	x				
17		x				x	
18		x	x				
19	x						
20		x	x				
21	x						
22		x				x	
23		x	x				
24		x	x				
25		x	x				
	7	18	8	1	2	9	1

Preparation of diet causes extra amount of work

TABLE VII-g. SMOKING LIMITATIONS

Case number	Not present	Present	Consequences denied	Consequences		
				Eliminates source of relaxation	Inhibits social participation	Others
1		x	x			
2	x					
3	x					
4	x					
5	x					
6	x					
7	x					
8	x					
9		x		x		
10	x					
11	x					
12		x		x		
13	x					
14	x					
15	x					
16	x					
17		x		x		
18		x		x	x	
19	x					
20		x	x			
21	x					
22	x					
23	x					
24	x					
25	x					
	19	6	2	4	1	0

TABLE IX. THE TOTAL NUMBER OF CONSEQUENCES CAUSED BY EACH FACTOR

Factors	Factor present. Total number	Consequences denied	Consequences. Total number caused by each factor
Public attitudes			
Anxiety	13	0	21
Etiology			
Hereditary tendency	12	8	5
Neglect in care	21	0	26
Symptomatology			
Chronicity	25	0	53
Unpredictability of increase in symptoms	23	3	34
Progressive severity	24	0	78
Lack of external evidence of disease	25	11	28
Persistent pain	12	9	4
Awareness of visceral dysfunction	20	5	31
Low activity tolerance	24	0	60
Loss of voluntary controls	2	0	2
Loss of consciousness	3	1	2
Deformity	2	1	1
Treatment			
Need for consistent medical supervision	25	4	38
Need for regular medication	20	6	16
Self-determination concerning medication and treatment	9	8	1
Hospitalization	24	1	51
Required inactivity	18	1	41
Dietary limitations	18	8	13
Smoking limitations	6	2	5
Painful treatment	5	3	2
Use of appliance	1	1	2