

## PSYCHOSOCIAL FACTORS IN THE PREVENTION AND RECOVERY OF CARDIOVASCULAR DISEASES

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**Abstract:** The initial aim and the most important step in the rehabilitation of patients with coronary heart disease is the return to work. Although there are many patients physically recovered after myocardial infarction, they are not reinserted from the socioeconomic point of view, the psychosocial factors being mostly responsible. A comprehensive approach is needed given the somatic, psychological and social size of the health of the individual, family and society. There is evidence in the sense that major cardiovascular complications occur mainly in the population with psychosocial increased risk and the complication in turn will have psychological and social consequences leading to different psychological levels of deadaptation, as well as to social dependence, affecting the quality of life. Given these things, it is necessary to disclose this evidence starting with the psychosocial risk issues in primary, secondary prevention and cardiovascular recovery. First of all, the social risk is highlighted. The main social risks are represented by the social support with its types and subtypes. Other elements playing a crucial part in the evolution of the cardiovascular diseases are the low socioeconomic status, the occupational status, marital stress, care stress. Another aspect is the individual psychological risk. The psychological individual emotional risk factors are the affective disturbances, such as depression, anxiety, hostility. The identification and the management of the psychosocial risk become imperative for the success or failure of the psychological rehabilitation, psychological rehabilitation level including personal variations. It cannot be overlooked the role of the psychologist in the integration of rehabilitation methods, psycho-diagnosis and psychotherapy playing a special part.

The contemporary society faces the epidemics of chronic degenerative diseases, primarily the heart disease.(1) Both primary and secondary prevention and the recovery of patients with cardiovascular complications require a comprehensive approach taking into account the somatic, psychological and social size of the health of the individual, family and society. The interrelation between somatic, psychic and social is known from ancient times.

Contemporary science requires evidence to prove this by showing that psychosocial factors are also major cardiovascular risk factors, evidence that the medical science has now.

There are increasingly better known the mechanisms by which the social environment affects the psycho-physiological and psycho-neuro-immunological adaptation of the individual, bringing about to the occurrence of subpopulations at high cardiovascular risk through the differences in the psycho-physiological reactivity.

Knowing the psychosocial risk is paramount in the development of supportive social systems and in the implementation of cognitive behavioural therapy in individuals and subpopulations with increased cardiovascular risk. Without a holistic approach of health, we cannot conceive either the strategy of secondary prevention or the cardiovascular recovery. There is evidence in the sense that major cardiovascular complications occur primarily in the population with increased

psychosocial risk and, the complication in turn will have social and psychological consequences resulting in various degrees of mental deadaptation and social dependence, affecting the quality of life. Given the above mentioned, it is required to briefly present this evidence starting with the psycho-social risk issues in primary and secondary prevention and the cardiovascular recovery.(2)

### Psychosocial risk

Even since 1863, Virchow stated the hypothesis according to which “epidemics occur after major disturbances in the culture of humanity”. The contemporary society faces the epidemic of chronic degenerative diseases, primarily the chronic cardiovascular diseases and tumours. In the last ten years, we are witnessing very rapid changes in the culture of humanity, such as the transition from the industrial revolution to the atomic one and now the informational one. As a result, society globalization process emerged, as well as the consumer society. This extremely fast process led to the abrupt loss of cultural values formed gradually over the centuries, bringing about new values less defined criteria, and radical changes in the lifestyle of people. The lifestyle of a society is a manifestation of culture.

Actually, cultures represent the system of ideas, concepts, rules, meanings. 2007 European Guidelines for the prevention of cardiovascular disease are based on the following assumptions:

- Cardiovascular diseases are a major cause of premature

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death in most European populations; it is a source of disability and infirmity, and contributes greatly to the rising costs in the health system.

- The mass spread of cardiovascular diseases is closely related to lifestyle and to the modifiable psychosocial factors.

There is clear evidence that cardiovascular risk and cardiovascular mortality are closely linked to the socio-economic development of a country. Thus, we can speak of a "social gradient" regarding the cardiovascular risk in the developed and developing countries. Moreover, today, we have clear evidence on the psychosocial gradient of the cardiovascular risk existing within a country or a community, related to the level of its socio-economic development. This is based on the observations of the studies "The English Whitehall Study I, II" (1978-1994), which showed that the ischemic cardiopathy risk is explained only in a proportion of 30-40% by the classic risk factors, such as cholesterol levels, hypertension and smoking, the rest being bound to the unknown factors that increase along with the decrease of the socio-economic standard of certain social categories. The same study showed that the prevalence of smoking in the men and women in England has decreased significantly between 1961 and 1991 in the socioeconomic groups with increased standard, while it remained almost unchanged in the socio-economic groups with a low standard.(3) The above show that socio-economic groups with low socio-economic standard have a high level of classical cardiovascular risk, but also of the psycho-social one. Based on the above findings made in the recent decades, we can now talk about:

### **Social risk**

It represents the negative influence of society, linked to the appropriate social role and position of the individual in relation to his/her degree of professional training, as well as to the somatic, psychological integration or to the possible disabilities. Lack of an appropriate role and social position will lead to social dependence, with financial, social, psychological consequences. In this context, cardiovascular disease has become the disease of the social classes with low living standard. The main social risks are represented by the social support (decreased or lack of social support). We can talk about the following types of social support:(4,5,6,7)

- Structural social support. It is the support offered by the social entourage, governmental and nongovernmental organizations to individuals or social groups.
- Functional social support. It also includes the following forms of support: the support received, perceived, the instrumental support, the financial support, the informational support, the support for situation assessment, the emotional support.

As such, awareness of the social support along with the national decision makers and with those in the urban and rural communities plays a crucial role in the initiation and implementation of primary and secondary prevention programmes. Creating local suggestive groups for the cardiovascular patients is a fundamental necessity in the cardiovascular recovery. The low socio-economic status (3,9,10) is another social risk factor playing a central part in creating the social gradient within the context of a community among the subpopulation with increased low socio-economic status and decreased one.

### **Occupational stress (11,12,13)**

In the contemporary society, cardiovascular disease primarily affects the individuals of working age. On average, the active productive period extends on 30-45 years of the age of an individual and a society. During this period, the individual tends

to occupy a social role and social position in relation to his/her degree of training. This process is a continuous adaptation to the actual and perceived demands of the professional environment, leading to occupational stress. Currently, we distinguish two types of occupational stress.

- "Work-overload" model, characterized by increased demands at the workplace, low decision control, low work support. This type of occupational stress characterized the transition countries.
- "Stress-recognition" model characterizes the industrialized countries with a high socio-economic standard, multinational companies, where professional effort is increased, financial recognition is increased, also the moral recognition of the autonomy of decision, but control status is however low.

This means that an individual with a high role and social position, at some point, can lose this status when the interests of the company change, thus, representing a very high cardiovascular risk. Epidemiological evidence shows that occupational stress induces a chronic psychological stress and in those concerned, subclinical atherosclerotic manifestations. Social status is an aggregation of financial, occupational and educational factors. There is a clear inverse relationship between the socio-economic status and the occurrence of the cardiovascular disease, the subjects with a low socio-economic situation registering the highest risk of developing cardiovascular events.(8) In relation to this, an important variable is the gender of patients, women being disadvantaged. The National Health and Nutrition Examination Survey (NHANES) shows that if a low social status causes a 29% increase in male mortality, in the female, the growth is of about 60%).(8) It was also demonstrated the protective effect of an appropriate social status. Cardiovascular risk factors (diabetes, obesity, sedentary lifestyle, smoking, hypertension) have a higher prevalence in patients with disadvantaged socio-economic status.(8) At the same time, we must not forget the fact that patients with lower living standards have less access to health services, (8) these barriers are more important in the case of women.

### **Marital status (14,15,16)**

There is epidemiological evidence in that failed marriages represent an increased cardiovascular risk in women through subclinical atherosclerotic events compared to those successful or regarding the unmarried persons.(16) In a study conducted on Scandinavian women, marital status was associated with coronary disease progression measured by angiography.(17)

Conversely, a happy marriage for women is associated with fewer coronary atherosclerotic lesions and with their slow progression (measured by Doppler).(18) There is also evidence on the growth rate of recurrences of myocardial infarction in people living in failed marriages.

### **Care stress (of one of the mates) (19)**

Epidemiological evidence demonstrates the doubling of the major cardiovascular events during 4 years of observation in those who need to care for one spouse because of a physical or mental disability.

### **Individual psychological risk (4,19,20,21) in the occurrence and development of chronic degenerative cardiovascular disease**

Human personality is developed in terms of socialization since early childhood. The education in this period will be determined based on the behavioural model. Thus, every situation requires a cognitive, rational and emotional processing. If emotional processing is wrong, anxiety, depression or hostility will progressively occur, under the form of emotional

individual psychological risk factors.

### **Individual psycho-physiological reactivity (21,22)**

The degree of psycho-physiological response to stress varies from individual to individual, forming the individual psycho-physiological reactivity. This is the marker of the processes involved in the development of ischemic heart disease.(16) On this basis, a new population is at high risk for cardiovascular disease, thus, the individual psycho-physiological reactivity becomes a natural selection criterion for cardiovascular diseases.

*The importance of the psychosocial risk factors in the medical practice.*

Given the importance of psychosocial dimension of health, namely the importance of the psychosocial risk in the occurrence and development of heart disease, its recognition and management in the general and cardiology medical practice becomes an imperative. The psychosocial risk factors have an increased prevalence in the people with cardiovascular disease. Thus, depression in the National Comorbidity Survey (23) was of 5%, but in the patients with coronary heart disease, it was of 15%. Psychosocial risk patients have a low compliance and poor adherence to treatment. Adherence to the treatment of the depressed patients was 3 times lower than those without depressive symptoms.(24) Low social support had similar effects.

### **Identification and management of psychosocial risk in the preventive medical practice and cardiovascular rehabilitation**

The cardiologist plays an important part in the detection and treatment of psychosocial risk, given that very often, the patient addresses first the cardiologist. As such, the cardiologist will play three major parts:

- Screening and assessment of the psychosocial risk factors. Patient assessment is desirable to be carried out by questionnaires or interviews. It is important that the patient's questioning to also cover the psychosocial issues: emotional factors, such as depression, anger, anxiety; chronic stress in terms of professional, marital stress, proper evaluation of the psychosomatic complaints or sleep disorders,
- Selecting the patient with increased psychological risk and behavioural problems for: cognitive therapy; continuous monitoring of patients with high compliance for psychotherapy or psycho-pharmaco-therapy (26); management of psychosocial distress in clinical practice.(4,27)

### **Recommendations for the management of the psychosocial risks in cardiovascular prevention and recovery**

The doctor alone cannot solve the problems of the comprehensive approach to prevention. Strategies to increase the efficiency of the recommendations of behavioural change must include: 1) creating a "therapeutic alliance" with the patient; 2) the patient's consent about the need for lifestyle change; 3) ensuring that the patient understands the relation between lifestyle and disease; 4) helping the patients overcome the barriers related to lifestyle change; 5) engage the patients to identify the risk factors and their change; 6) monitoring the progress of lifestyle change by following up the patients; 7) the involvement of all health staff in this effort whenever possible.

Recommendations for the psychosocial risk management in clinical practice: 1) psychosocial risk assessment (depression, hostility, low socioeconomic status, social isolation, stress, chronic vital stress), 2) presenting the aspects related to the quality of life and medical consequences 3) modal therapy plan (behavioural, individual and group counselling regarding the psychosocial risk, stress disease processing techniques); 4)

referral to the specialist of the patients with severe emotional distress (education for a healthy lifestyle, physical exercise, relaxation techniques, smoking abandonment programme for heavy smokers). Recommendations for a good effective doctor-patient relationship: 1) spend enough time with the patient; 2) listen carefully to the patient; 3) accept the opinion of the patient about the disease and acknowledge the expressions of concern and anxiety; 4) talk so that the patient understands you; 5) make sure that the patient has understood your advice and is willing to follow it.

### **Psychosocial issues specific to cardiovascular recovery**

European research in this field has been conducted primarily by the members of the EACPR (European Association of Cardiovascular Prevention and Rehabilitation) presented in the CARINEX study and others. The major problems facing the research would be the following: defining the psychosocial risk profile for coronary heart disease within the psychosomatic profile; the influence of the disease on the psyche during rehabilitation; the development of a single methodology for detecting the psychological problems during rehabilitation; developing a psycho-hygiene methodology for the cardiovascular patients; effects of rehabilitation on the quality of life.

### **Acute phase of the cardiovascular disease**

It is widely recognized that cardiovascular disease in the acute phase is a syndrome of a post-aggressive syndrome, accompanied by a strong mental stress. In this sense, the clinical picture is dominated by a strong feeling of fear, fear of death, fear of life in the shadow of death. The acute episode is a dramatic moment in the social life of the individual, of the family. In such circumstances, the psycho-physiological effects of emotions can take place fully, anxiety and psychomotor restlessness can lead to failure to comply with the medical instructions. The cardiovascular patient will react specifically to the disease during this period, according to the structure of his/her personality, the patient's behaviour being cooperative or of rejection regarding the medical treatment, health staff or to the awareness of the disease.(25)

### **Convalescence and post-convalescence of the cardiovascular disease**

It represents periods extremely important in that they form the proper awareness of the disease. In the absence of sustained efforts in this regard, the negative aspects will manifest psychologically. These changes are of particular importance for the recovery both in terms of recognition and of correction, their perpetuation leading to changes in the patient's personality. Psycho-emotional manifestations occur primarily when facing professional strains in the conditions of not recognizing our own reserves. Against this background, there occurs the reduction of the patients' work capability and in the conditions of satisfactory functional reserves, it can result in the worsening of the patient's health status. In these circumstances, it becomes obvious the need to observe the psychological reactions of the patients to disease, but knowing these reactions is not possible without knowing the patient's personality, individually and socially.

### **Major mental syndromes in the cardiovascular patients (2)**

1) Anxiety syndrome - anxiety itself. Subjectively: the patients complain about: restlessness, instability, inner tension; afraid of the consequences of disease, disability; adverse reactions to family welfare; anxiety due to the state of things at work; disturbances of sleep, light sleep, nightmares, insomnia. Objectively: the patient requires the prescription of sedatives; the patient requires repeated information on his/her health status,

prognosis, ability to work; the gaze is obsessive, muscle stiffness, especially in the facial muscles; eyes glittering, restless, mental rigidity, restless hands, especially the fingers are moving continuously, intense sweating, tachycardia.

2) The phobic syndrome. Subjectively: fear of cardiac failure; fear of recurrence of myocardial infarction; fear of sudden cardiac death; the listed events occur or increase during physical activity outside the hospital or at home. Objectively: the patient is very cautious, especially in terms of physical activity; fear appears to ergometry testing performed at low level; fear is associated with bodily tremors, weakness, sweating, pallor, tachycardia, hyperventilation.

3) Hypochondriac syndrome. Subjectively, during the interrogation, the following occur: unjustified anxiety regarding the health condition; frequent discomfort and pain in the chest region and other parts of the body; tendency to consider their health status as worse than it really is. Objectively: the discrepancy between the high number of complaints and the absence of objective symptoms; too much attention is fixed on the patient's own health, who often consults other specialists.

4) The depressive syndrome. Subjectively: apathy, pessimism, hopelessness ideas; the patient does not believe in solving the situations in a favourable manner; dark assessment of the present state and the future; tendency to see everything in gray. Objectively: the face expresses sadness; upon questioning, the patient's replies are monosyllabic; he/she has a low pitched voice.

5) Asthenic syndrome. Subjectively: general weakness; physical and mental fatigue; irritability, headache, sleep disturbances, decreased work capacity. Objectively: emotional lability; increased agitation; emotional and autonomic instability. The degree of mental impairment can be mild, moderate and severe with characteristics for each grade. In mild cognitive impairment, the patient's behaviour does not change considerably reaching the severe grade, where work capacity is greatly reduced. Mental status may be the major element which causes impaired health.

### **Level of psychic rehabilitation in the cardiovascular patients**

Another very important feature of the psychosomatic interrelation during rehabilitation is the psychological rehabilitation. In general, psychological reactions disappear 4-6 months after the onset. Under normal conditions, between 3-11 months, the patient can adapt to the consequences of disease, in terms of physical and social requirements dictated by stages III-IV of cardiovascular rehabilitation. Based on these considerations, in stage II and especially in stage III of rehabilitation, psychiatric rehabilitation assessment is performed. The result of the examinations is an important indicator regarding the efficacy of the recovery methods, also allowing foreseeing the final success or failure of rehabilitation. Currently, this is widely accepted and is one of the accepted principles of the World Health Organization (WHO). (13,14,15)

### **Psychological effect of the rehabilitation group**

Psychological rehabilitation cannot consist only in the observation and selection of patients for the purposes of the psychological risk profile of deadaptation. There are a number of ways to solve the psychological problems, more or less close to the everyday life of the patient undergoing recovery. Rehabilitation should permanently seek solutions for the patient in order not to pull him out from the natural entourage. Such a way of solving the psychological problems (including) would be the group of rehabilitation or the rehabilitation in group. During rehabilitation, it is particularly important the contact with the entourage, especially with

people who have successfully surpassed rehabilitation issues; they will facilitate the rehabilitation of the newcomer. Thus, particular importance is the formation of rehabilitation groups for the purpose of avoiding large gaps regarding age and functional residual capacity. (2,26,27) Acquiring accurate knowledge of the disease, acquisition of skills within the group will not result in psychological crisis, they will be learned easily. The rehabilitation group will present a psychosociological model in which each member has a role (according to microsociology). Spontaneous affiliation and the role held in the group will try to imitate the real role within the social position. Within the group, we can also track the changing the role and the response to change. We plan to hold these groups on psychosomatic principles. It is recommended to use the psychological effects of some physical therapy programmes. In this framework, patients can convince themselves about their endurance ability.

### **Physical training effects**

The movement, the systematic training, is the main protector factor of physical and mental health. Underlying disease, older age, female gender, convenience, symptomatic nature of the disease, all these play a determining part in improving performance. The disease occurrence disproportionately reduces the level of physical activity through a distorted perception of the disease and the anticipation of troublesome symptoms (angina, dyspnea, fatigue). Making an early cardiopulmonary exercise test before unbalance can be a support for the introduction of a physical recovery programme.

### **Components of medical physical culture (28):**

elaborating various programmes regarding the type of movement, completely avoiding stereotypes, physical therapy programme must also consider various movements during the daily activities; avoiding monotony and programme management in terms of charge, at the level of the group's average effort capacity will provide a programme that will lead to positive mental and somatic effects of the effort (relaxation, peace, security). Reinserted patients may satisfy the work demands under optimal conditions, work representing the main place which generates anxiety, frustration because of the uncertainty related to the exercise capacity.

### **Psychologist's role (29)**

Within the integration of recovery methods, psycho-diagnosis and psychotherapy play a special part. Proper management of such activities cannot be made empirically, becoming a potential source of aggravation of the initial problems. For this reason, WHO recommends the establishment of hospital medical psychology services. The staff performing such services will be made up of a clinical and psycho-somatic psychologist who could make contributions to clarify the psychological factor in cardiovascular diseases. We believe that enriching the arsenal of psychological rehabilitation will gradually solve these problems in optimal conditions for the patient and society.

### **Conclusions:**

Psychological repercussions of coronary disease are dominated by depression. This is facilitated by the lack of information, the patient's personality, social status. It can be prevented by early and active rehabilitation and by well understanding the psychology of the patient. Depressive tendency is a major cause of psychological, vocational and family disability for coronary patients. These impacts are significant in number, but the most important is the psychological handicap and the consecutive hemodynamic disturbances. At the end of this discussion on the psychological and social rehabilitation, we can say that although many times,

the doctor and the patient and his family are less concerned with the psychological rehabilitation and more with the physical recovery, the first is of paramount importance because it provides the patient's quality of life in ultimate instance. Cardiac functional recovery, physical recovery, regaining exercise capacity may be useless if they do not provide the resume of work, the family, professional and social usual activities.

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