MEDICAL UNIVERSITY - SOFIA

FACULTY OF PUBLIC HEALTH

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ABSTRACT

of a dissertation for the award of a scientific degree "Doctor of Science"
Professional direction: 7.4. Public health
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On the topic:

PROMOTIVE AND PREVENTIVE HEALTH CARE IN PATIENTS WITH CARDIOVASCULAR DISEASES

Prof. Diana Krasteva Ivanova, PhD

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The dissertation is written on 338 standard pages and includes 45 figures, 3 tables and 2 diagrams. Appendices – 10. They are used 229 literary sources, of which 171 in cyrillic and 58 in latin.

In connection with the dissertation, 5 articles were published.

The dissertation was examined and approved by the departmental council of the Department of " Health care“ of the Faculty of Public Health at Medical University – Sofia "Prof. Tzekomir Vodenicharov, MD, PhD, DSc"

The scientific jury of 7 habilitated persons in the relevant scientific field, which will conduct the procedure for the defense of the dissertation work, has the following composition:

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The defense materials are available at the secretariat of the Dean's Office of the Faculty of Science "Prof. Tzekomir Vodenicharov, MD, DSc"at the Medical University – Sofia, UMBAL “Tsaritsa Joana - ISUL”, Sofia, 8, Str., Byalo More and on the Medical University – Sofia’s website

In the abstract, the numbers of the tables and figures correspond to the numbers in the dissertation.

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Abbreviations used

ACS – acute coronary syndrome

AMI – acute myocardial infarction

AKB (CABG) - aorto - coronary bypass

AS – atherosclerosis

ALT - alanine aminotransferase

BTE - Pulmonary thromboembolism

EKG - electrocardiography

ERS– erythrocyte sedimentation rate

CPK - creatine phosphokinase

LDH– lactate dehydrogenase

MI – myocardial infarction

NI – nosocomial infection

PTSA - percutaneous transluminal coronary angioplasty

RF – risk factors

SCA - selective coronary angiography

TG - triglycerides

UAP - unstable angina pectoris

Introduction

Cardiovascular diseases are classified as socially significant diseases. It is these diseases that determine the profile and structure of mortality and morbidity in a given country or region. Socially significant diseases are defined as diseases of the modern lifestyle. They are among the main causes of morbidity and mortality of the population in modern countries. In order for a disease to be included in the group of socially significant, it must meet certain criteria:

- high level of mortality and morbidity among the population and emerging adverse dynamics;
- to affect a large part of persons of active age;
- to have a high share in the structure of the causes of death among the population and especially among persons of active age;
- to have a high share in the cost structure of treatment and rehabilitation;
- to require the intervention of highly qualified and specialized medical assistance;
- to require complex treatment with the use of expensive medications and the use of high-tech processes;
- to cause significant social, economic and psychological damage to individuals, their families and society as a whole;
- burden public funds and social services due to long-term incapacity and disability.

Changes in lifestyle, various risk factors sharply change the incidence and increase mortality among large groups of people.

Cardiovascular diseases represent a major share of the diseases of the elderly population in all countries of the world and have been the main cause of mortality in recent decades. The incidence of Cardiovascular diseases has increased in recent years and is a major social problem. Diseases of the cardiovascular system include diseases of the heart, ischemic heart disease, arterial hypertension, atherosclerosis, heart failure, rhythm and conduction

disorders, diseases of heart valves, cardiomyopathies, diseases of cerebral vessels and peripheral arteries, strokes, heart attacks, heart defects and many other diseases. In diseases of the heart, patients complain of rapid onset of fatigue, limitation of physical activity, shortness of breath during exertion or at rest, nocturnal attacks of shortness of breath, cough, sputum discharge, thoracic pain, discomfort during physical exertion or at rest, palpitations, tachycardia, malaise, dizziness, edema, diuresis disorders, rapid change in body weight. The most common forms of cardiovascular disease are ischemic heart disease, cerebrovascular disease and high blood pressure. The probability that a person will develop cardiovascular disease is the "risk" of that disease. This possibility exists in every person, but some people are at greater risk than others. There is no single cause of cardiovascular disease. Factors increasing the risk or "risk factors" of cardiovascular disease may not be affected or may be difficult to affect (male gender, advancing age, hereditary predisposition), but may be effectively affected and reversible. The main risk factors - hypertension, dyslipidemia, overweight and diabetes mellitus - for cardiovascular diseases, often combine in the same patient, which sharply increases the risk of cardiovascular diseases. A combined, albeit slight, elevation of the underlying risk factors, in generally healthy individuals, is often underestimated by the medical community, even though the combination of these risk factors significantly increases the risk of cardiovascular disease. Diseases that lie in common causes such as unhealthy eating, drinking and smoking and that are a sign of cardiovascular disease can be overcome by encouraging healthy lifestyle habits and providing preventive health services. There are many different factors such as environment, behavior and physiology that interact to influence the development of cardiovascular disease. Many of the causes of heart disease are related to behavioral factors such as stress, hostility, and hence physiological activity, which are taken as given personality traits. It has been established that high stress, low social support, lack of economic status, and psychological depression are present in those suffering from heart disease.

Recognizing psychosocial risk factors aims to help and prevent heart disease in high-risk individuals. Studying the interaction between environmental and genetic factors also plays an important role in studying the origins of heart disease. Cardiovascular diseases have a certain medico-social significance in our modern society, which necessitates conducting more in-depth studies and research aimed at social factors and the possibilities for overcoming them.

Prevention is a set of medical and non-medical measures that society undertakes to achieve better health and quality of life by isolating risk factors, preventing diseases and reducing their consequences. Prevention is protection that acts even before the manifestation of certain diseases, protection that prevents their appearance, and at another stage - their development and complication in an unwanted direction. In modern health care, risk and preventive behavior are key concepts. Taking adequate and timely measures can reduce the effect of risk factors. Reducing or eliminating the impact of certain environmental risk factors can significantly reduce the risk of cardiovascular disease. Health prevention is all measures taken by health professionals and society to prevent the spread of risk factors and diseases and their complications among the population. The participation of society in health promotion is mainly carried out through partnership; facilitating dialogue and reaching consensus; engagement; shared responsibility; respect for dignity; social support; consolidation of activities; resource prioritization.

The recommendations for the prevention of cardiovascular disease of the European Society of Cardiology emphasize the need for more information from general practice and hospitals and the importance of physical disabilities, weight control and maintaining a healthy lifestyle. A more detailed discussion of data grading systems, priorities, and objectives is also included in the recommendations. Added new sections on the significance of gender, heart rate, body mass index, and waist circumference for cardiovascular morbidity.

Cardiovascular disease prevention has several principles and approaches for implementing the basic principles:

- to help those at low cardiovascular risk to keep it low for as long as possible and to help those at increased risk to reduce it.

- to ensure health it is necessary: not to smoke; to eat healthy food; to ensure 30 minutes of moderate physical activity daily; the body mass index should be <25 kg/m and central obesity should not be allowed; AH <140/90 mmHg; - total cholesterol <5 mmol/L; LDL-cholesterol <3 mmol/L; blood sugar <6 mmol/L.

- to ensure strict risk control in high-risk people, especially with established cardiovascular diseases and diabetes, it is necessary: BP <130/80 mmHg if possible; total cholesterol <4.5 mmol/L with a target of <4.0 mmol/L if possible; LDL-cholesterol <2.5 mmol/L with a target of <2.0 mmol/L if possible; blood sugar <6 mmol/L and HbA1C <6.5% if possible.

- to apply cardioprotective drug therapy in high-risk people and especially in those with established atherosclerotic disease.

The genesis of cardiovascular diseases is complexly determined - adverse environmental factors and genetic predisposition; unhealthy lifestyle determining cardiovascular risk - arterial hypertension, dyslipidemia, smoking, diabetes mellitus, obesity, stress, menopause, use of oral contraceptives, low physical activity. Promotional and preventive health care for patients with Cardiovascular diseases is a priority task embedded in the overall activity of health care specialists in order to achieve effective results and improve the quality of life of patients with Cardiovascular diseases. The main goal of promotional and preventive health care in patients with cardiovascular diseases is to increase disease-free life expectancy and improve quality of life.

The promotive and preventive health care approach for patients with cardiovascular disease is aimed at the promotion of health, the preservation and restoration of health and quality of life, as well as the prevention of disease and is used in every field of health care.

Purpose, tasks, material and methods of the study

Purpose of the study

To study the existing organization of nursing care in hospital structures and the medico-social problems in patients with Cardiovascular diseases, developing an approach for promotional and preventive health care in patients with Cardiovascular diseases, prioritized to optimize the modern organization of health care.

Tasks of the research

1. Analysis and medico-social characteristics of patients with cardiovascular diseases admitted for treatment in the Cardiology Clinic of University hospital Lozenets - Sofia and University hospital Sofiamed - Sofia.

2. Study of the lifestyle of patients with cardiovascular diseases admitted for treatment in the Cardiology Clinic of the University hospital "Lozenets"- Sofia and the University hospital "Sofiamed" - Sofia.

3. Research and analysis of the main risk factors and characteristics of cardiac crisis in patients with Cardiovascular diseases.

4. Study of lifestyle in patients with Cardiovascular diseases.

5. Analysis, control and evaluation of health care for patients with Cardiovascular diseases of the existing organization of health care in hospital settings for these patients.

6. Development of an approach for promotional and preventive health care for patients with Cardiovascular diseases, which includes monitoring the general condition and measuring indicators; diagnostic tests and therapeutic procedures.

7. Conducting an expert evaluation of the developed approach for promotional and preventive health care for patients with cardiovascular diseases.

Research materials and methodology

The object of the study is health care for patients with cardiovascular diseases

The subject of the study is the organization of work and the optimization of health care for patients with cardiovascular diseases

Technical unit of the observation: University hospital "Lozenets" - Sofia, Cardiology Clinic and Department of Invasive Diagnostics and Therapy, University hospital "Sofiamed" - Sofia, Cardiology and Invasive Cardiology Clinic.

Logical unit of research:

- patients with Cardiovascular diseases admitted for treatment in the Cardiology Clinics at University hospital Lozenets - Sofia and University hospital Sofiamed - Sofia

- nurses from the Cardiology Clinics at the University hospital "Lozenets" Sofia and the Cardiology Clinics of the University hospital "Sofiamed" - Sofia

Signs of monitoring logical units:

- signs related to the diagnosis Cardiovascular diseases and accompanying diseases

- signs related to the medico-social characteristics of patients with cardiovascular diseases

- signs related to the lifestyle of patients with Cardiovascular diseases

- signs related to the main risk factors in patients with cardiovascular diseases

- signs related to optimization of health care in patients with Cardiovascular diseases

- signs related to the characteristics of the developed approach for promotional and preventive health care for patients with cardiovascular diseases.

Nature and scope of the study

The study includes patients admitted for treatment in the Cardiology Clinics of the University hospital "Lozenets" - Sofia and the Cardiology Clinics of the University hospital "Sofiamed" - Sofia, who expressed their written consent to participate in the study. The selection is random - there is no selection of the respondents, which gives reason to claim representativeness of the results.

The total number of respondents is 700 of which:

- 650 patients from the Cardiology Clinics
- The total number of nurses surveyed is 50

Nurses caring for patients with Cardiovascular Diseases were included in the study:

- 20 nurses from University hospital "Lozenets" - Sofia
- 20 nurses from University hospital "Sofiamed" - Sofia
- 10 nurses - experts - 5 from University hospital "Lozenets" and 5 from University hospital "Sofiamed". For the expert assessment, senior nurses and nurses with long-term practice in the emergency department, invasive diagnostics and therapy department and hospital were included.

Place and time of the survey

The place of study is the Cardiology Clinic of the University hospital "Lozenets" - Sofia and the Cardiology Clinic of the University hospital "Sofiamed" - Sofia. The study was conducted in the period - 2018-2021.

Research methods

- Documentary method – medical records, nursing records and all medical records that contain information about patients with Cardiovascular Diseases

- Sociological method: patient survey and nurse survey. Questionnaire cards have been developed, which mainly contain closed questions with the possibility of choosing a formulated answer, as well as the possibility of expressing a comment.

- Statistical method - Data processing and analysis were performed with SPSS V 19.0 statistical package. Results are presented as means ± standard deviation.

Student's t-tests and one-dimensional variance analysis were used to compare variables. $p<0.05$ was considered statistically significant. Correlation analysis between different indicators was also conducted.

- Graphical analysis – Microsoft Excel 2010 products were used for tabular and graphic processing and presentation

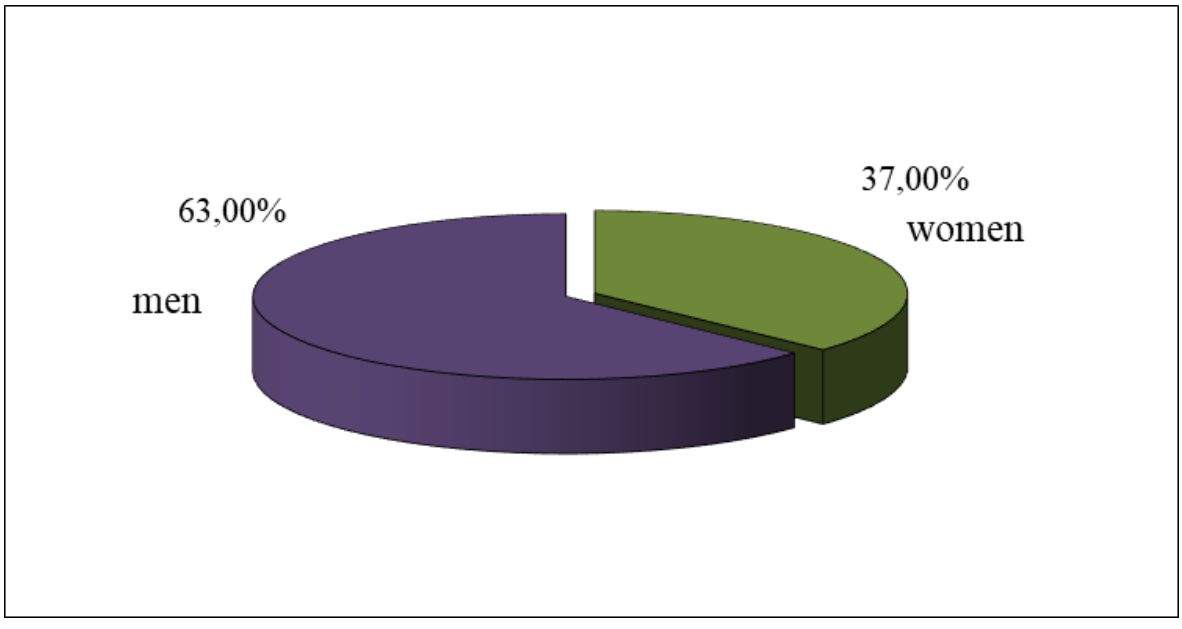
- Expert evaluation - performing an expert evaluation of the developed approach for promotional and preventive health care for patients with Cardiovascular diseases.

Survey results

Medico-social characteristics of patients with Cardiovascular diseases

Cardiovascular diseases are among the main causes of morbidity and mortality of the population in modern countries. Socially significant diseases are defined as diseases of the modern lifestyle. Changes in lifestyle, various risk factors (tobacco smoking, sedentary lifestyle, stress, consumption of unhealthy food) sharply change the incidence and increase mortality among large groups of people. In order for a given disease to be considered socially significant, it must meet the following characteristics: high mortality and morbidity among populations, which outline unfavorable dynamics; covers large parts of the population of working age; to occupy a high share of the structure of the causes of mortality among the population; to occupy a high share of the costs of treatment and rehabilitation; to require the availability of specialized medical assistance; to require complex therapy and apply high-tech equipment; to bring high social, economic and psychological harm to the population; to engage various public funds and the social service as a result of long-term incapacity and invalidation.

Fig. № 1 **Distribution of patients by gender**

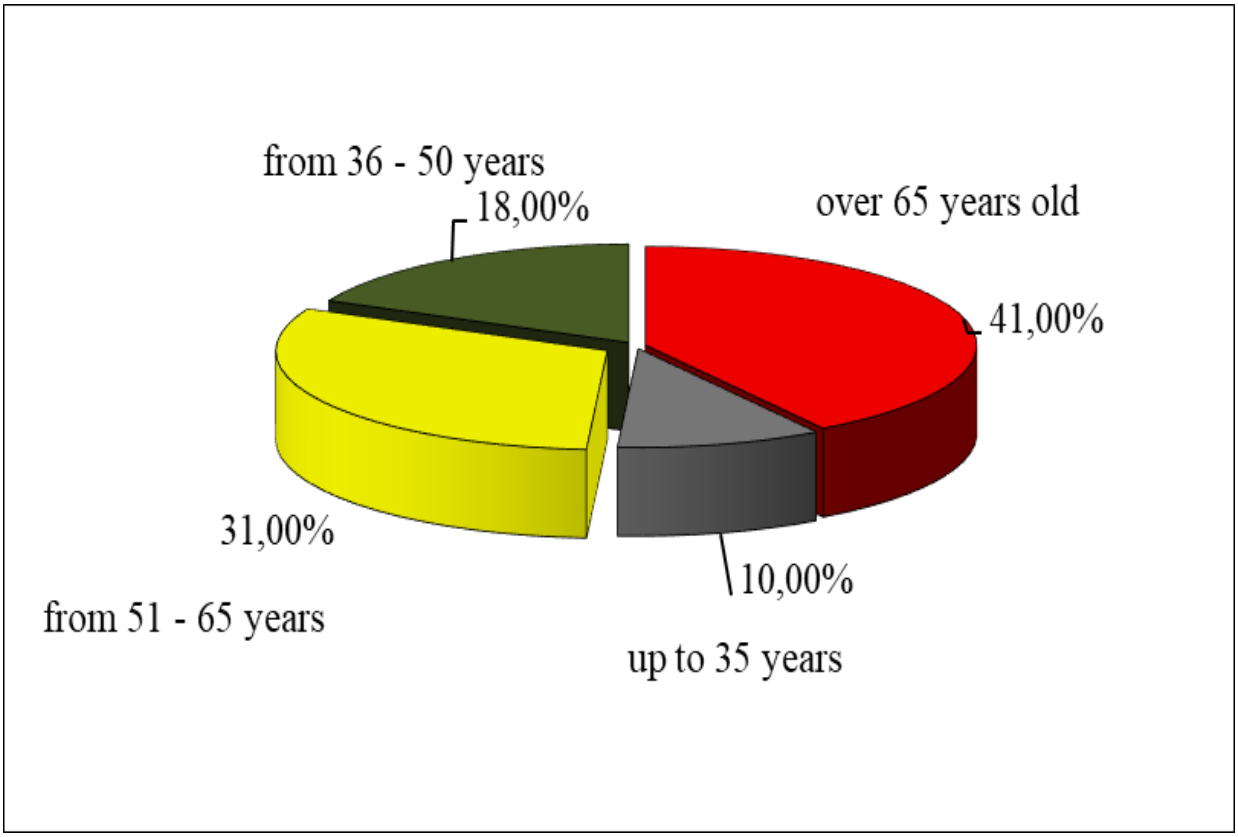


From the conducted anonymous survey it is clear that 63.00% of those admitted for treatment at the Cardiology Clinic are men and 37.00% are women. These statistics show that the majority of patients are men. Most literary sources highlight as a regularity the predominance of men with cardiovascular diseases. It is necessary to conduct a number of more in-depth studies of both the risk factors and other factors influencing the development of the disease.

Conducted correlation analysis showed that there was no statistically significant relationship between gender and diagnosis (p> 0.0001).

The different gender of patients requires the respect of the patient's rights, as well as the preservation of his autonomy. This presupposes resourcefulness on the part of nurses and ensuring the necessary psychological comfort when accommodating patients.

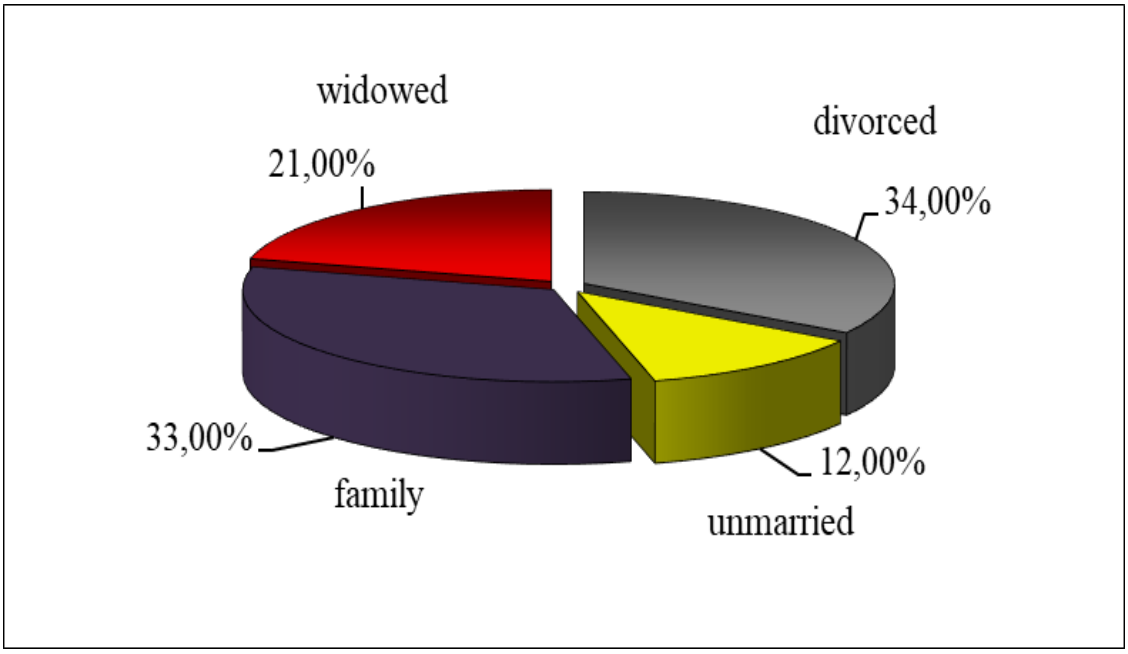
Fig. № 2 **Distribution of patients by age**



From the analysis of the data, it is clear that patients under the age of 35 are 10.00% of the respondents, which is a negative trend in recent years. The oldest patient is 90 years old. From 36 to 50 years, the respondents are 18.00%, from 51 to 65 years are 31.00%. The relative share of patients over 65 is the largest. These results show that the most at-risk group for this disease are people over 65 years of age. These are people of retirement age who are still full-fledged and capable of active professional activity, but their state of health is also essential. Age changes are an important a

nd essential factor in a number of diseases and above all in Cardiovascular diseases. Damage to the heart and circulatory system leads to a number of pathological changes, for which lifestyle is also crucial.

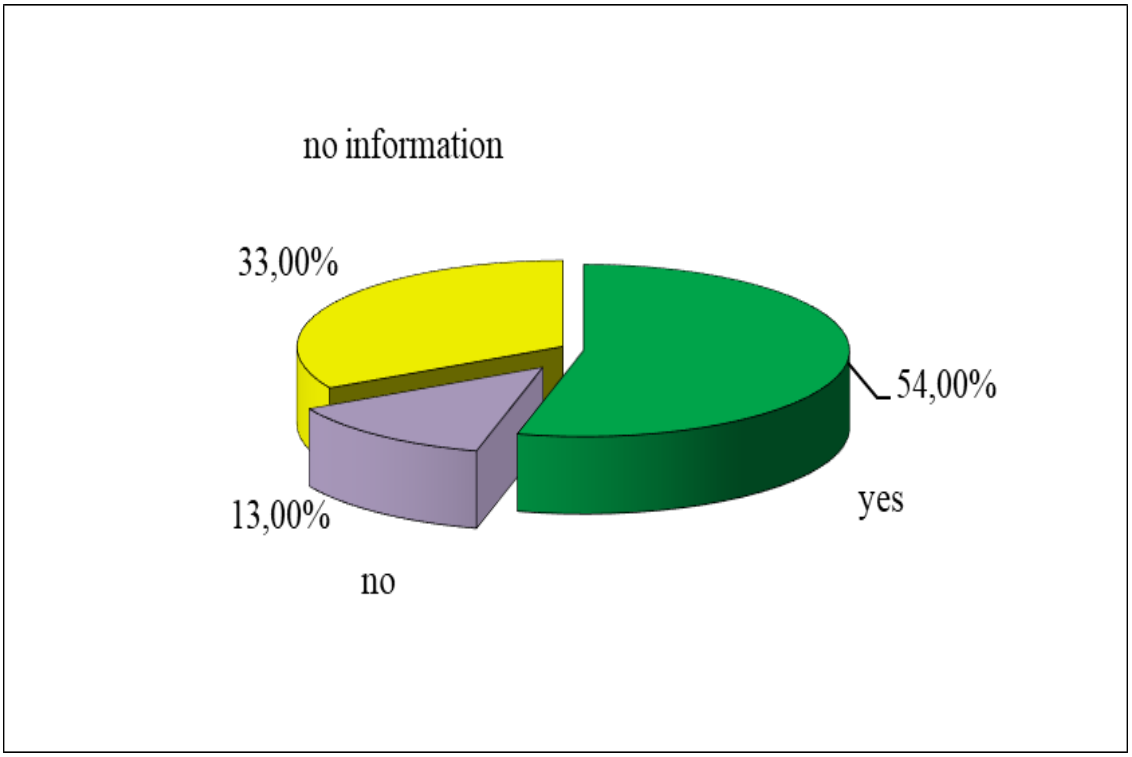
Fig. № 3 **Marital status of the surveyed patients**



33.00 % of the surveyed patients are married, 21.00 % are left without a partner - after the death of a loved one, 34.00 % after a divorce and 12.00 % are single. These data show that married and divorced people mainly have problems

of a cardiovascular nature. Family people have serious responsibilities and obligations, and cardiovascular diseases significantly change people's lifestyles. Separation from a spouse is definitely a stressful situation for people, which negatively affects mental and physical health.

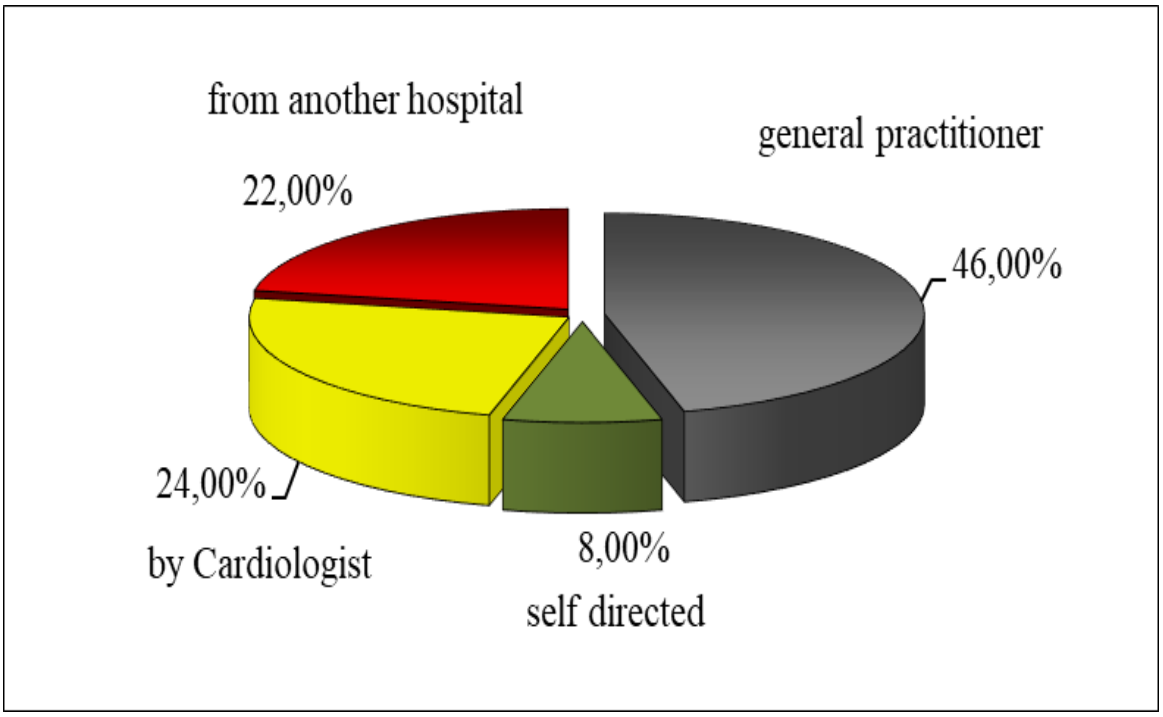
Fig. № 4 **Awareness of the surveyed persons regarding hereditary Cardiovascular diseases**



54.00 % of the respondents reported that they have information about cardiovascular diseases of their parents and relatives. Many cardiovascular diseases can be inherited. A large number of predisposing genes predispose to the development of cardiovascular disease risk factors. 13.00 % of the respondents lack information about cardiovascular diseases in the family. 33.00 % of the respondents have no information about cardiovascular diseases in their family, or do not know about existing ones.

These results show that the majority of patients with cardiovascular disease grew up in an environment where they observed their sick loved ones, and this should motivate them to lead a healthier lifestyle. In a family where there is a person with cardiovascular disease, it is necessary for everyone to be informed regarding the risks and complications. The family environment and the patient's relatives are leading for building motivation in observing a healthy lifestyle and protecting against possible complications. Cardiovascular diseases are multifactorial conditions and it is important that all determinants responsible for their development are affected, both at the societal and individual level. The incidence of Cardiovascular diseases has increased in recent years and is a major social problem.

Fig. № 5 **Referral of patients for hospitalization**

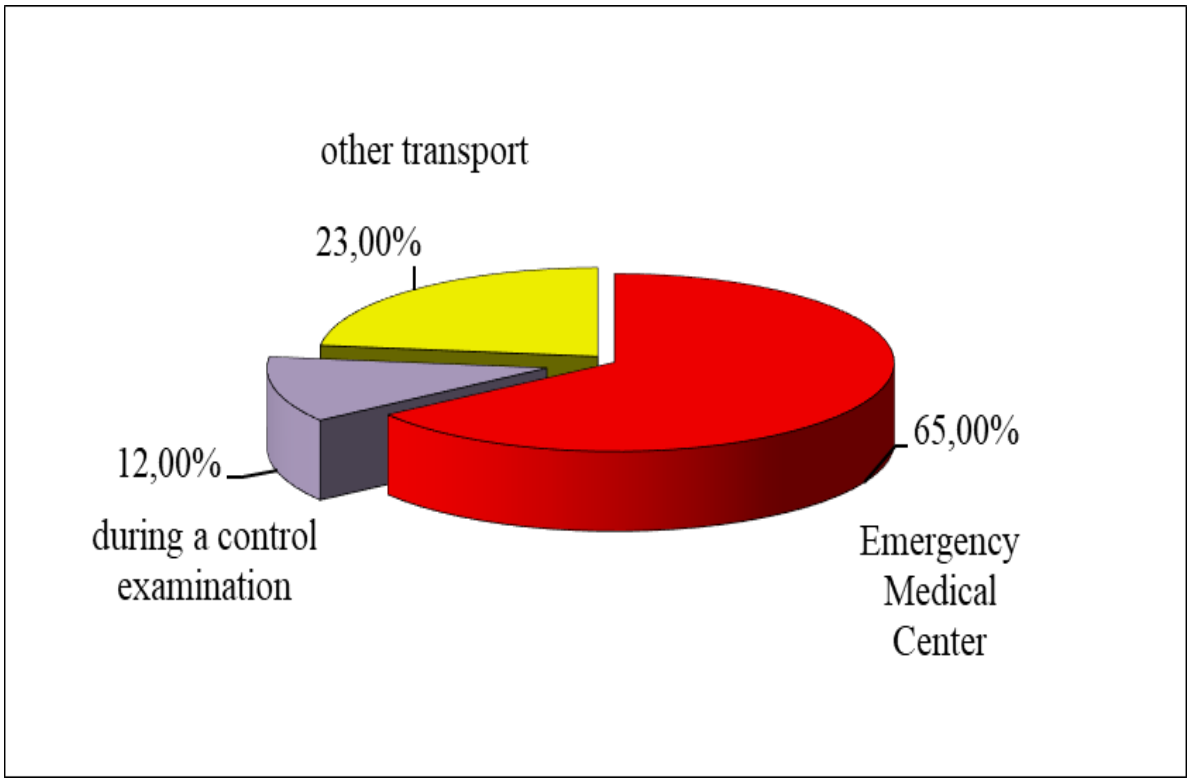


The results show that the largest number of patients were referred by a general practitioner - 46.00 %, admitted after their admission to another hospital - 22.00 %, and by a Cardiologist - 24.00 %. Self-referred patients are 8.00 %.

Admission of patients for hospital treatment depends significantly on their awareness and prompt referral to a general practitioner or specialist. This indicates that the initial referral of patients for hospitalization is not linked to the leading diagnosis, resulting in inefficient use of health care resources and delaying and increasing the cost of treatment. This, in turn, leads to longer hospital stays for patients, complications and a longer recovery period.

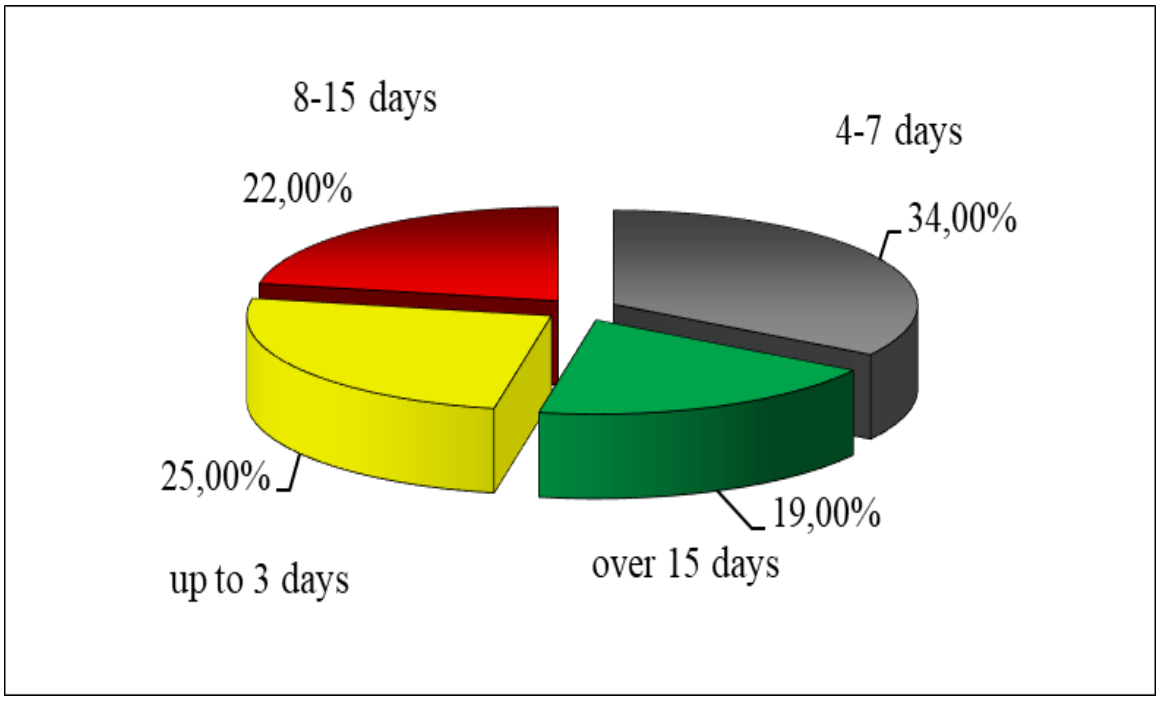
Difficulties in diagnosing cardiovascular diseases require, on the one hand, an increase in the qualifications of medical specialists, but on the other hand, an increase in the health culture of the population regarding risk factors and the leading characteristic symptoms of the disease. Referral of patients to the designated hospital structures and their transportation is a serious problem that has undergone various developments over the years. Clinical pathways are introduced as a form of standard behavior to regulate each patient's proper access to hospital care.

Fig. № 6 **Method of transporting patients to a hospital facility**



The main way in which patients are transported to hospital facilities is through an Emergency Medical Center - 65.00 %. Significantly fewer were those who used their own transport -23.00 %, and at least -12.00 % were patients referred for hospitalization during a control examination. In recent years, with the improvement of the organization and structure of the Emergency Medical Center, as well as the reform carried out in the unit, there has been a significant improvement in communication between medical institutions and the Emergency Medical Center. This, in turn, increases patient confidence and results in shorter hospital stays for patients.

Fig. № 7 **Distribution of patients according to their stay in the Cardiology Clinic**

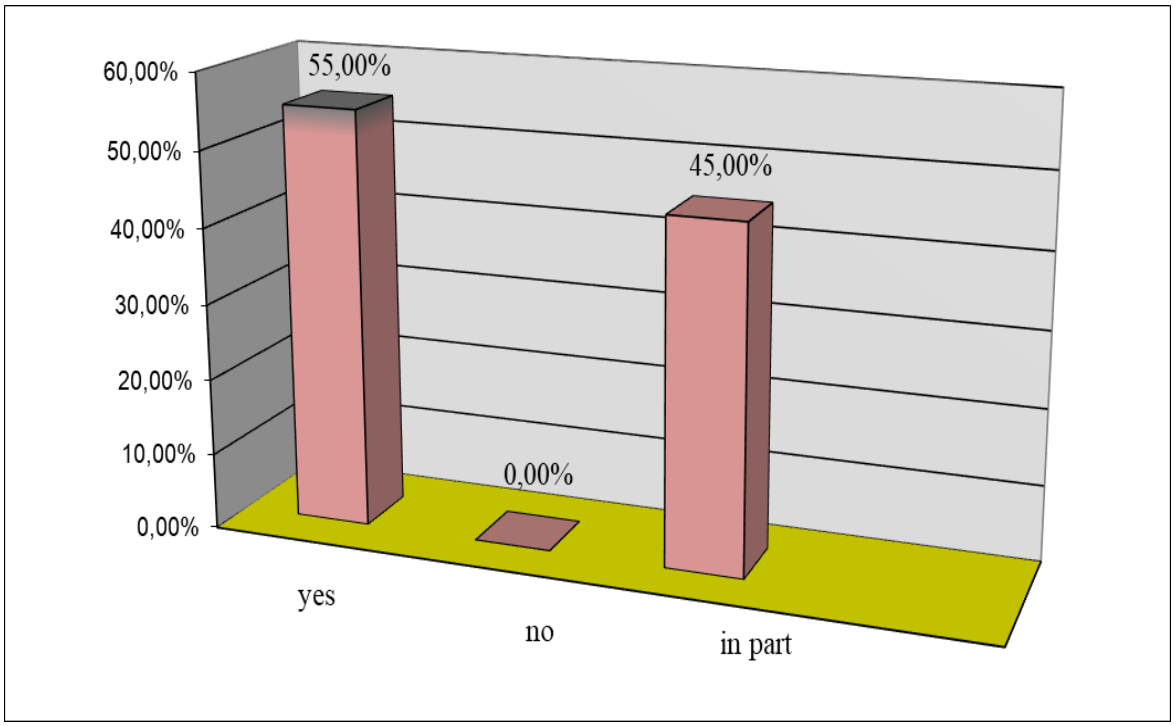


The stay of patients on a clinical pathway is regulated by the National Health Insurance Fund. Only 25.00 % of the patients included in the study stayed

in the Cardiology clinic for up to 3 days. From 4 to 7 days – 34.00 %, from 8 to 15 days – 22.00 %. The shortest stay of patients over fifteen days is 19.00 %.

It is necessary to approach each patient individually in order to achieve the desired results of the treatment. Cardiovascular diseases have been successfully treated in recent years thanks to the introduction of highly specialized treatment methods and technologies. Care for these patients must be tailored to the individual needs of each patient. These results demonstrate the successful application of modern medical advances and the effectiveness of specialized medical care provided to these patients by highly qualified specialists. These cares require continuous improvement of the qualifications of medical professionals.

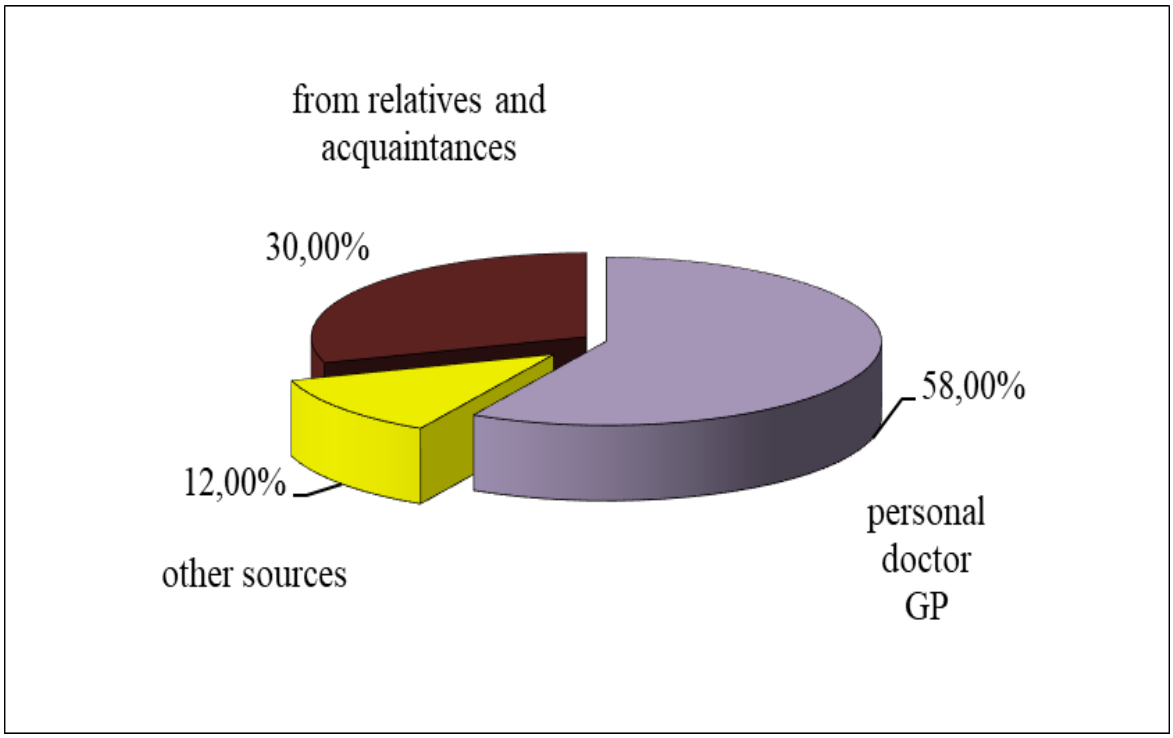
Fig. № 8 **Patient awareness of Cardiovascular Diseases**



Cardiovascular diseases have a great medico-social importance for the whole society. The population has access to a wide range of information regarding the medico-social significance of this scourge as a disease of modern society. More than half of the surveyed patients - 55.00 % are aware and informed about

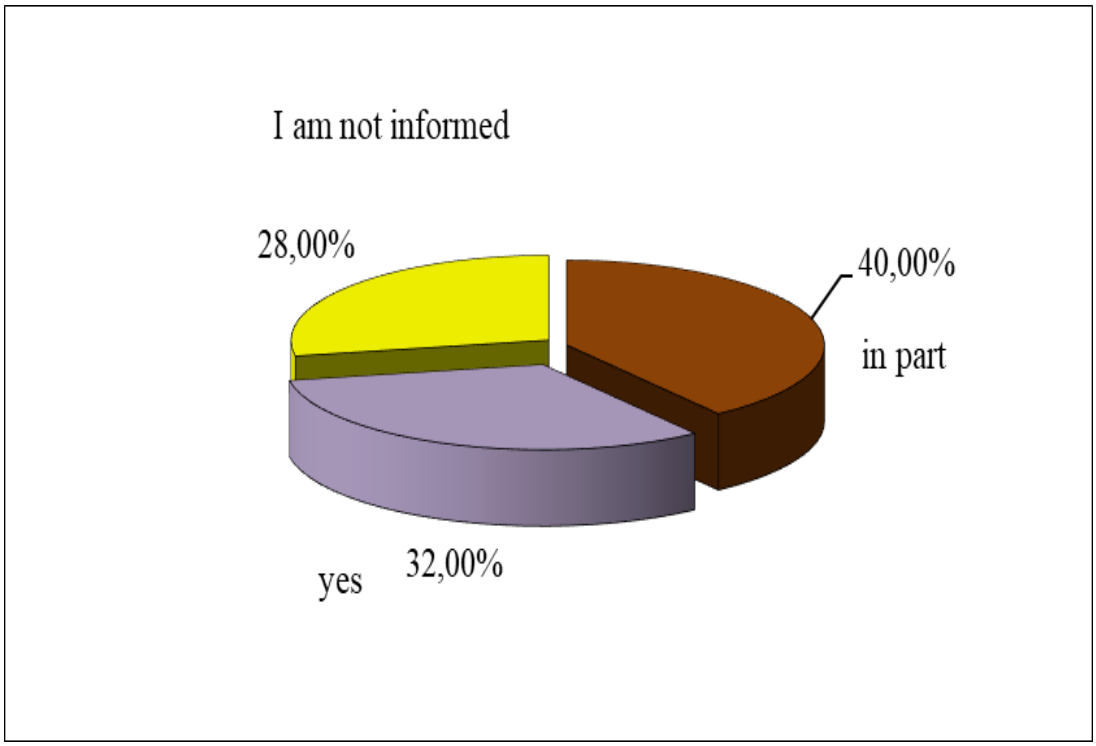
the risk factors and the need for a responsible attitude towards their own health. There are no negative answers to this question. This shows that, in general, people are informed about the disease and possible complications.

Fig. № 9 **A way to inform patients with Cardiovascular diseases**



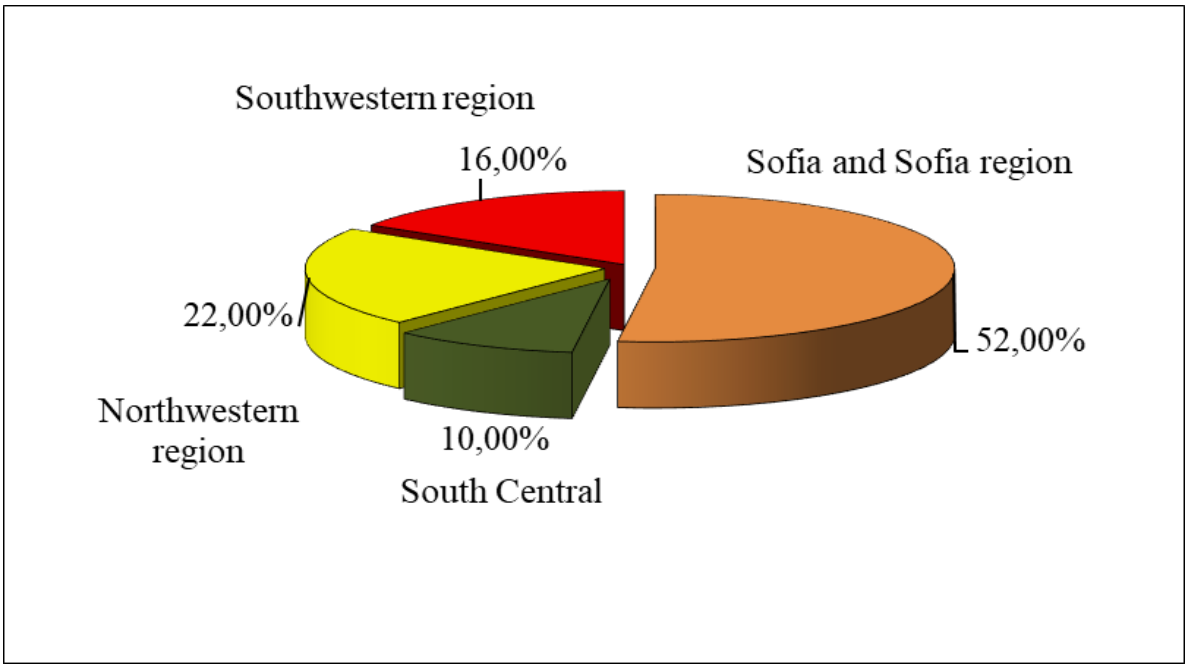
It can be seen from the obtained results that the largest part of patients received information from their personal doctor - 58.00 %. General practitioners are the primary and most important unit for monitoring the condition of patients with cardiovascular diseases, which leads to the early diagnosis of these diseases and their timely intervention for therapeutic or referral to inpatient treatment significantly reduces the risks of subsequent complications. 30.00 % of the respondents receive information from their relatives and acquaintances, and this information can be misleading for the patient, which in turn leads to a delay in the diagnosis. Only 12.00 % - use other sources for information (media, internet).

Fig. № 10 **Patient awareness of the risks and complications of Cardiovascular diseases**



28.00 % of surveyed patients indicated that they lack information regarding the risks and complications that may occur as a result of existing Cardiovascular diseases. A positive answer to this question was indicated by 32.00% of the respondents, and 40.00% - they were "partially" informed. These results definitely indicate the need for awareness so that patients are more thoroughly and thoroughly informed regarding the risks and complications that may occur from Cardiovascular diseases . Lack of awareness and delay in diagnosing this disease leads to irreversible risks and complications at a later stage. Thanks to the good information of patients, the results of timely diagnosis and treatment can be significantly improved, as well as their quality of life can be improved.

Fig. № 11 **Distribution of surveyed patients by region in the investigated hospitals**



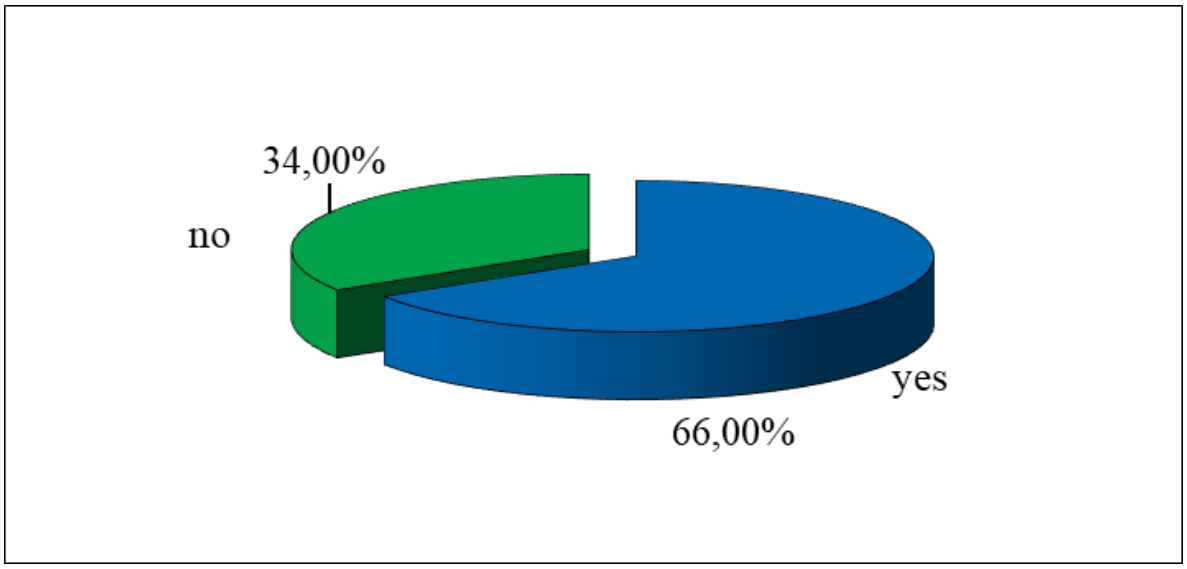
The largest number of surveyed patients is from the city of Sofia and Sofia region - 52.00%. These are the majority of patients in the hospitals where the study was conducted. There are 22.00% from the Northwestern region, 16.00% from the Southwestern region, and the smallest relative share - 10.00% from the South Central region.

The urgent transportation of patients with Cardiovascular diseases and the territorial location is one of the main factors for their effective treatment. This largely determines the contingent of patients who have entered the hospital. Referral of patients to the designated hospital structures and their transportation is a serious problem that has undergone positive development over the years. Clinical pathways are introduced as a form of standard behavior to regulate each patient's proper access to hospital care. Admission of patients for hospital treatment depends significantly on their awareness and prompt referral to a general practitioner or specialist.

Lifestyle of patients with Cardiovascular diseases

Lifestyle and living conditions encompass a range of socially determined behavioral patterns and interpretations of social situations that are developed and practiced by the group as a coping mechanism for life. Lifestyle is a concept primarily associated with social structures defined by class, ethnic, religious, professional and other affiliations. The way of life is determined by norms that unite a given social group, which is related to the material and living conditions (living space, comfort of the home, average monthly income), professed religion, traditions, work and social activities, social contacts. The main criteria for having a healthy lifestyle are: health activity: towards acquiring health knowledge and skills; to systematic control of one's own health condition; anti-risk behavior - absence of harmful habits; self-help and mutual aid (mastery of basic first aid skills); will to overcome harmful habits in oneself and others; observance of dietary nutrition if necessary; psychological attitude for partnership and public engagement on health issues.

Fig. № 12 **Blood pressure monitoring**

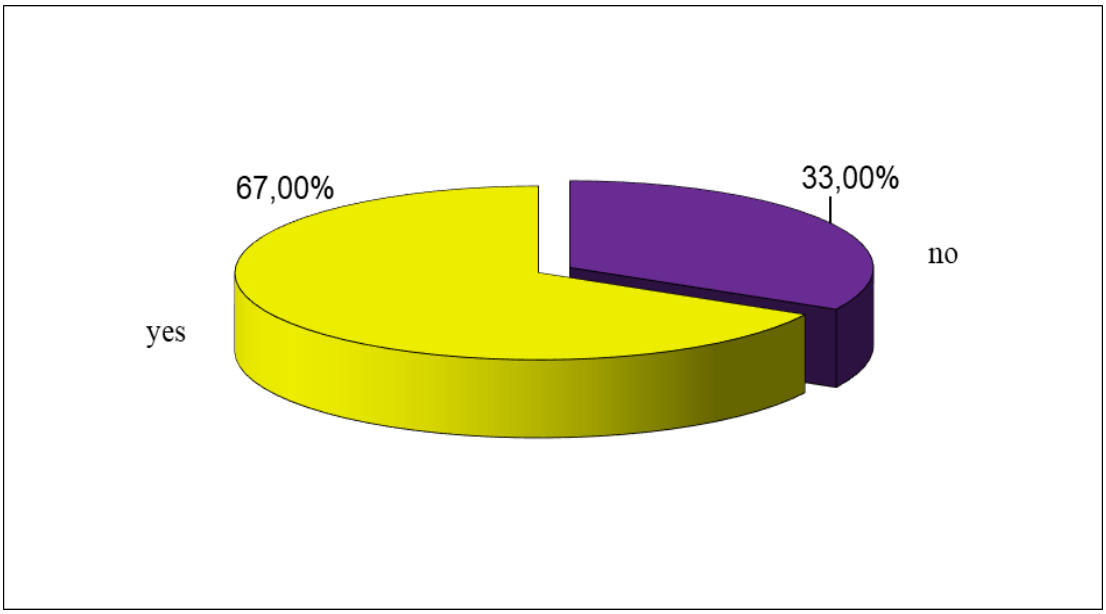


According to the obtained results, arterial blood pressure is regularly measured by 34.00 % of the surveyed patients, and 66.00 % of them resort to its

measurement only when they receive any complaints - severe headache, palpitations or shortness of breath. High blood pressure damages blood vessels. This in turn increases the risk of strokes, heart disease, kidney failure and heart attacks. The reason high blood pressure is so important is that it usually causes no symptoms, but it can still lead to serious complications. That is why one of the important conditions in the life of patients with cardiovascular diseases is to regularly monitor its values. One of the leading tasks in the treatment of cardiovascular diseases is the control of arterial pressure, which is why strict statistics and studies on this topic are conducted in a number of countries.

In the absence of adequate care and treatment, high blood pressure can lead to serious complications - heart disease, heart attack, congestive heart failure, stroke, kidney failure and peripheral artery disease, especially aneurysms and cystic dilatations of the aorta.

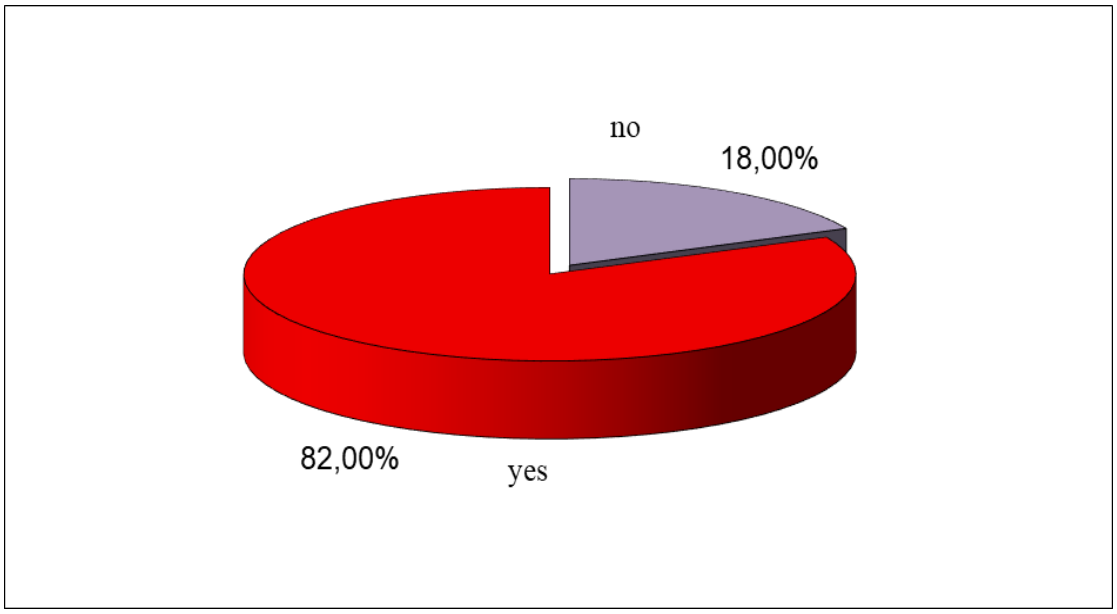
Fig. № 13 **Distribution of patients with arterial hypertension**



The obtained results show that about 2/3 of the surveyed patients have been diagnosed with arterial hypertension. Only in 1/3 of them arterial hypertension was not detected. Deviations of arterial blood pressure from the norm are

common. High blood pressure is called hypertension. A short-term increase in blood pressure can occur during physical and mental stress, during acute pain, during rapid ascent to a high altitude, etc. Depending on the etiology of arterial hypertension, it is divided into primary or essential hypertension /hypertensive disease/, in which the cause of the increase in arterial pressure is not established, and secondary or symptomatic hypertension, in which the increase in arterial pressure is attributed to another existing disease.

Fig. № 14 **Distribution of patients who experienced a hypertensive crisis**

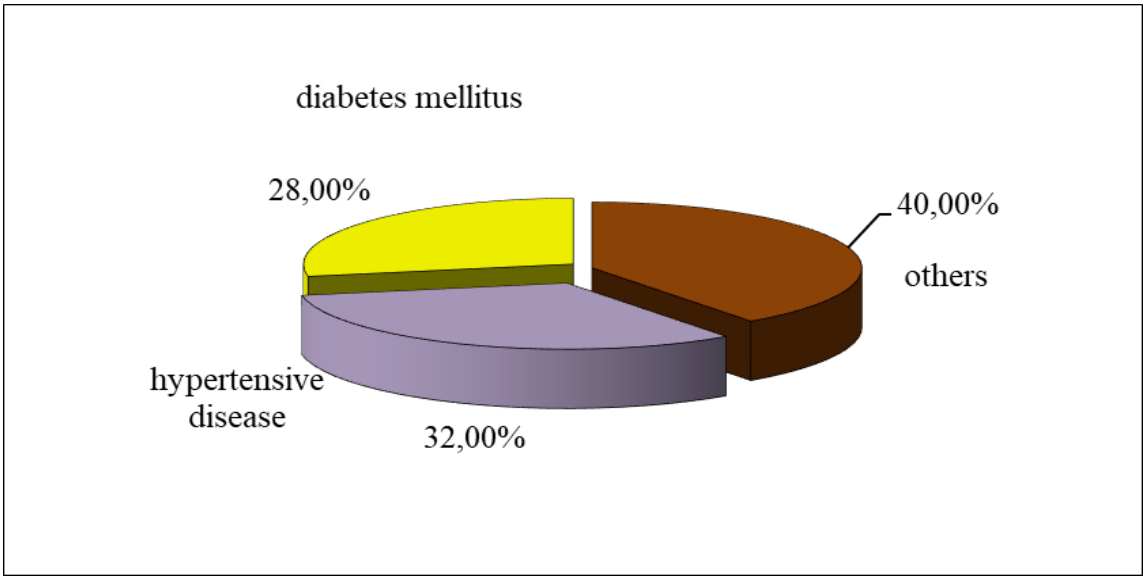


Hypertensive crisis is a clinical syndrome of a sharp and often sudden rise in blood pressure values above the usual maintained values for the respective patient. Usually, values above 200-220 for systolic and 100-120 for diastolic are considered pathological. Hypertensive crisis occurs most often in the early morning hours - usually between 5.00 and 10.00. It is more common in patients subjected to psycho-emotional stress, after gross dietary errors, often with intake of salty foods and pickles, excessive consumption of alcohol. A crisis also occurs

when the regular intake of the prescribed antihypertensive therapy is arbitrarily stopped.

The majority of the surveyed patients, 82.00%, stated that they had experienced a hypertensive crisis, and less than 1/4 of the surveyed answered negatively to this question. A small number of respondents reported the occurrence of certain clinical manifestations, such as palpitations, pallor, moderate headache, dizziness, feeling of restlessness and tension, before receiving the hypertensive crisis. Hypertension is often called the "silent killer" because it can exist for years without visible symptoms and without the sufferer knowing about it. Patients with cardiovascular diseases, in addition to being well trained to measure and monitor their blood pressure daily, they must be informed regarding their behavior in hypertensive crisis.

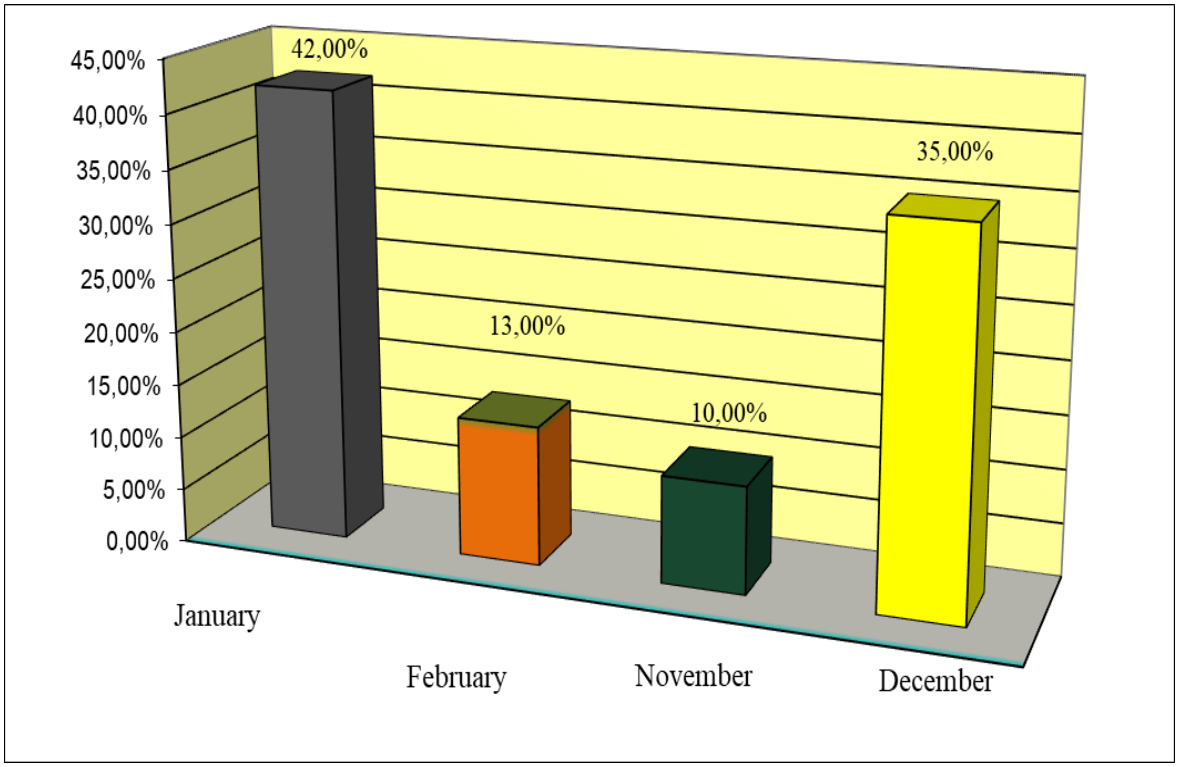
Fig. № 15 **Accompanying diseases**



The obtained data show that 28.00 % of the surveyed patients have been diagnosed with diabetes mellitus, and 32.00 % have proven hypertensive disease. These are chronic diseases that require constant medical supervision, as well as the observance of a precisely defined regimen. Lifestyle, limiting risk factors, and

nutrition are at the forefront of care for these patients. 40.00 % reported other comorbidities.

Fig. № 16 **Distribution of patients according to month of heart attack**

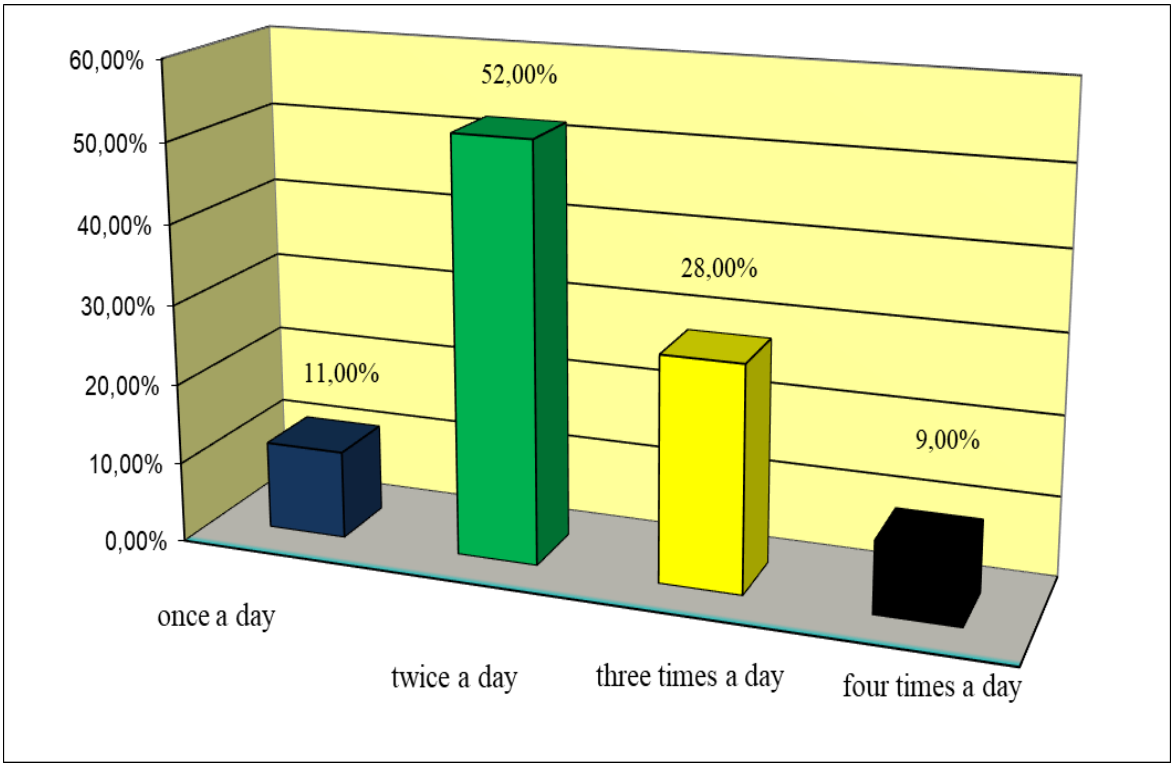


Patients indicated that they most often had a heart attack during four months of the year - January, February, November and December. It is noteworthy that these are the months in the winter season when temperatures are low and atmospheric pressure is high. With the largest relative share are the patients who had an attack in the month of January - 42.00%, followed by those - in December - 35.00%, in third place is the month of February - 13.00% and in fourth place is the month of November -10.00 %. Patients have a feeling of discomfort in the chest. One of the first symptoms of a heart attack is chest pain or discomfort. They are usually concentrated in the middle of the chest and are long enough - up to several minutes. Discomfort is defined as tightness in the chest and inability to

inhale fully. Other symptoms are creeping pain, dizziness, arm pain, shortness of breath.

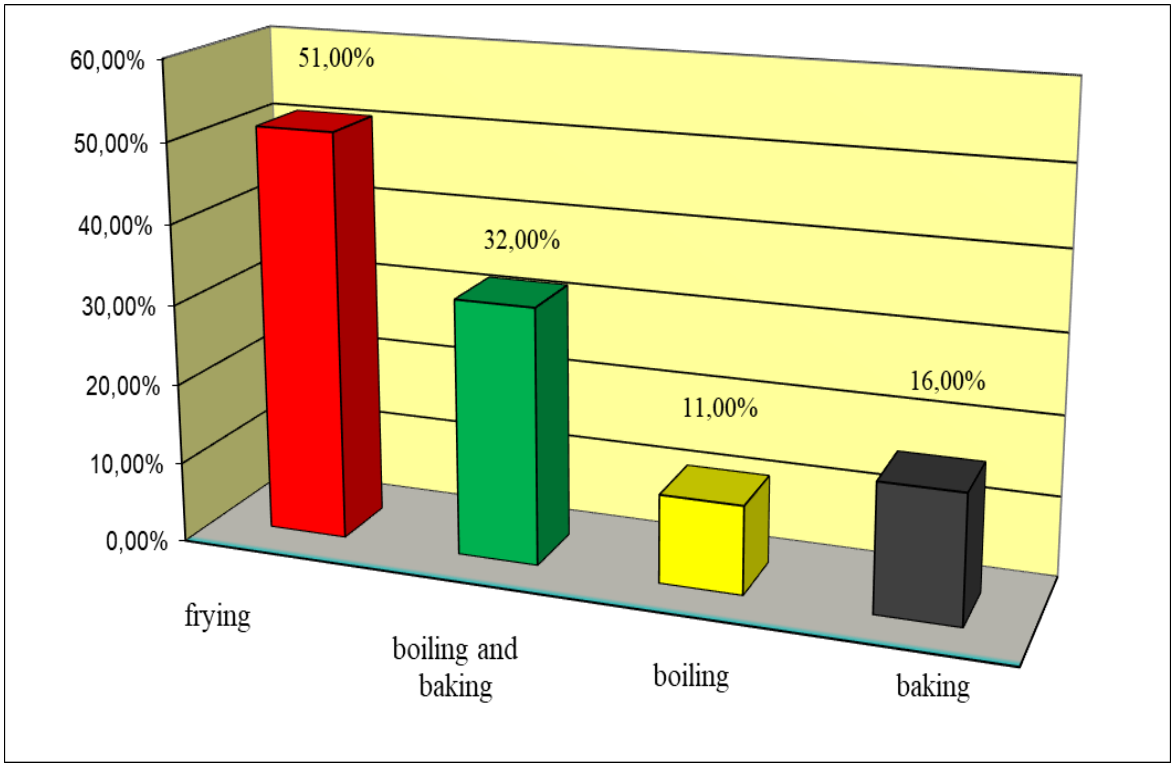
The influence of the seasons in patients with Cardiovascular diseases is extremely important, which requires them to follow a certain regimen and to take into account seasonal periods and temperature changes.

Fig. № 17 **Diet of patients with Cardiovascular diseases**



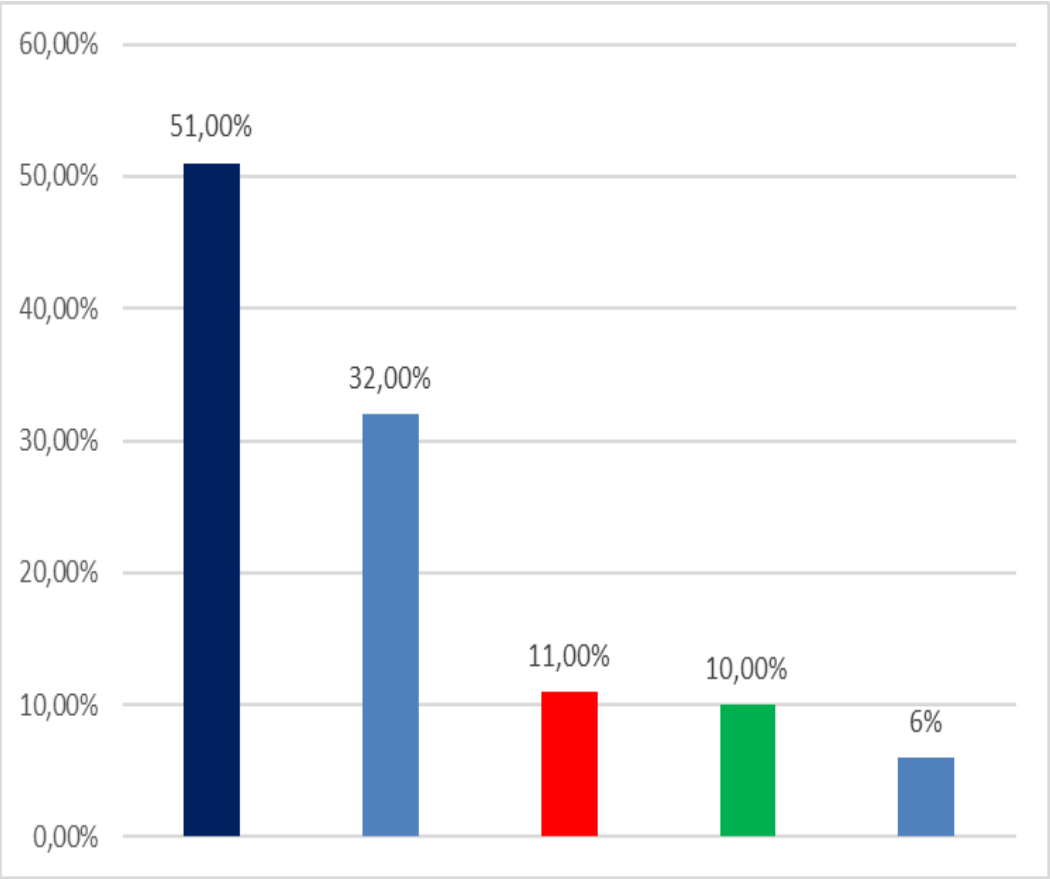
The data show that the majority of patients eat only twice a day - 52.00 % of the respondents. Patients who eat three times a day are - 28.00 %. 11.00 % eat once a day, 9.00 % four times a day. The number of meals is essential for patients with cardiovascular diseases, as well as the quantity and quality of food taken. The patient's regimen and diet are the main means of preserving the heart. Proper nutrition and the number of meals is a prevention of diseases of the heart and blood vessels, especially in the presence of risk factors. Diseases of the cardiovascular system require compliance with a certain nutritional regime.

Fig. № 18 **Applied culinary technologies**



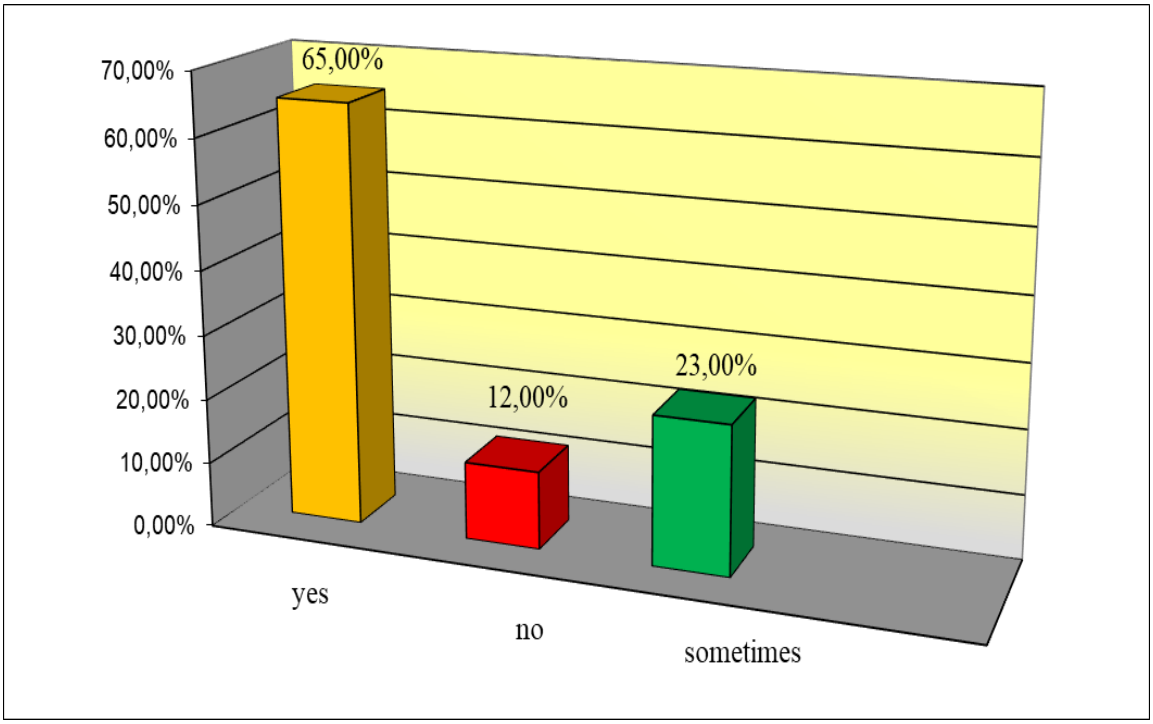
The preferred culinary processing of food by the respondents is mainly frying - 51.00%. Patients who use boiling and baking are 32.00 %, mostly baking - 16.00 %, and mostly boiling 11.00 %. In patients with cardiovascular diseases, frying food is prohibited by the diet they must follow, but unfortunately the results show other trends in the dietary habits of the respondents.

Fig. № 19 **Food preferences and food choices of patients with Cardiovascular diseases**



Patients with Cardiovascular diseases prefer to eat primarily meat dishes and sausages - 51.00 %, followed by bread and pasta - 32.00 %, third - confectionery and sugar products - 11.00 %, milk and dairy products – 10.00 %, and the least indicated the consumption of fruits and vegetables – 6.00 %. The data show a very serious problem in the eating habits of these patients - the amount of fruits and vegetables is greatly reduced at the expense of the consumption of meat and sausages.

Fig. № 20 **Additional salting of food**

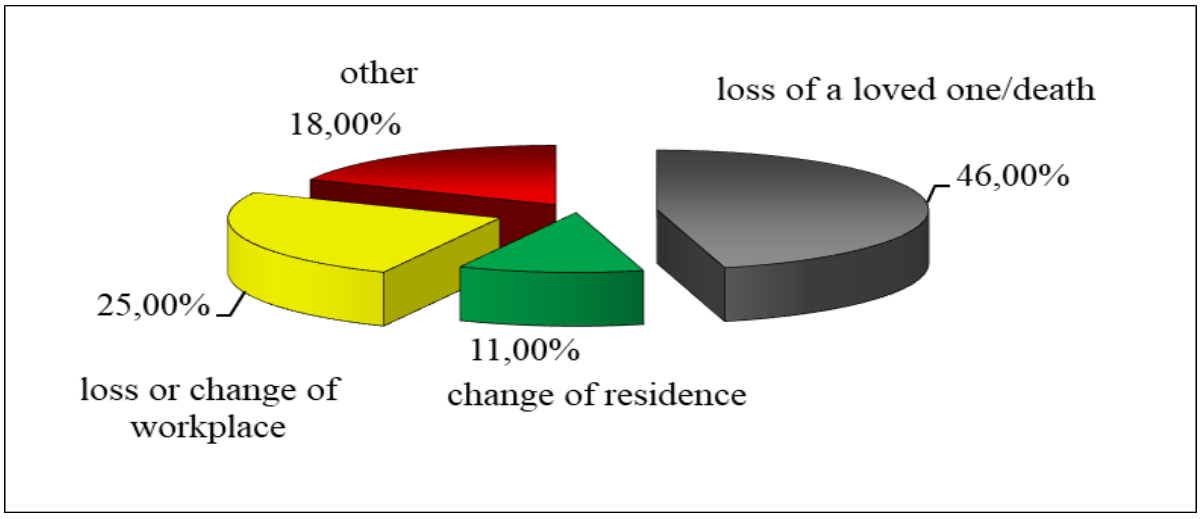


A greater part of patients with Cardiovascular diseases - 65.00 % - indicate that they add salt to food that has already been prepared with salt. Only 12.00 % of the surveyed patients gave a negative answer to this question. The answer "sometimes" was given by 23.00 % of the respondents. The diet of patients with cardiovascular diseases significantly limits the use of salt, but these patients do not follow the indicated dietary regime.

Main risk factors and characteristics of cardiac crisis in patients with Cardiovascular diseases

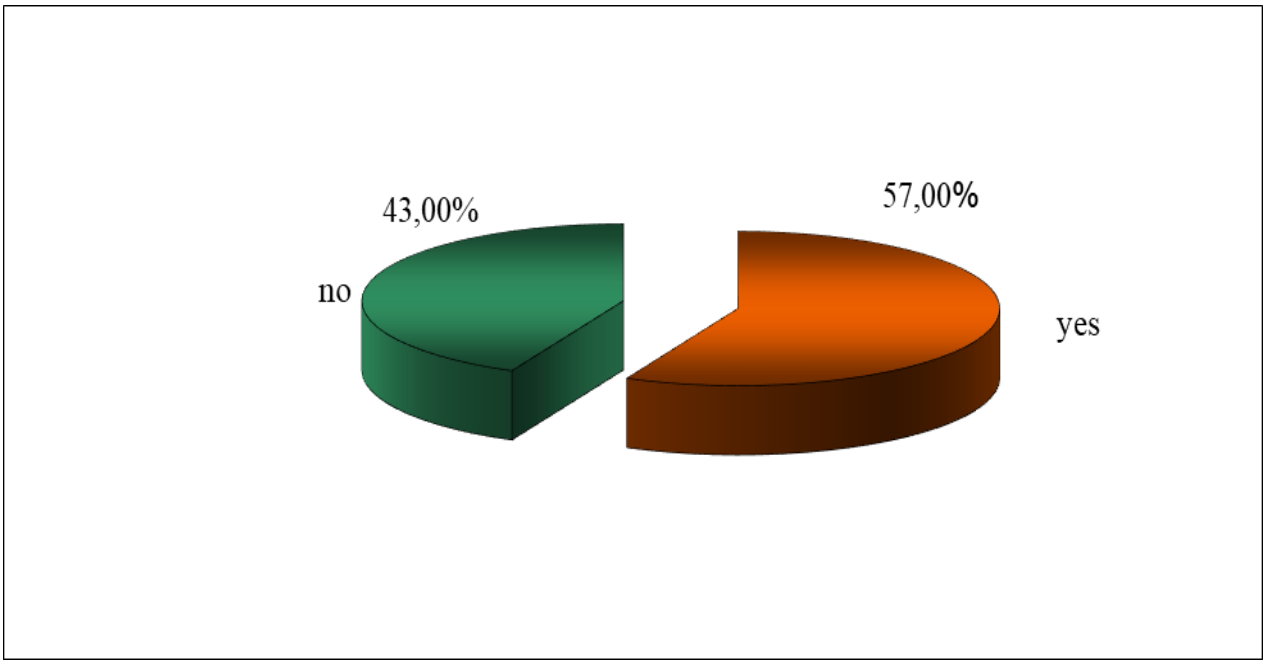
The progressively increasing trend of cardiovascular diseases creates a serious problem for public health and increases the financial costs of society. Cardiovascular diseases have a certain medico-social significance in our modern society, which necessitates conducting in-depth studies and research aimed at social factors and the possibilities for overcoming them. Reducing or eliminating the impact of certain risk factors can lead to a significant reduction in the risk of Cardiovascular diseases. A coordinated effort is needed within inpatient and outpatient care to educate and motivate the patient to change to a healthier lifestyle. A number of studies in recent years prove that the significant changes of a social and economic nature in our society affect the personal health of each person and lead to the development of various chronic diseases with medico-social significance in modern society. The main risk factors that can lead to diseases of the cardiovascular system are: severe mental trauma, nervous overstrain, sharp physical exertion, alcohol abuse, smoking, overeating, angina pectoris, increased cholesterol, arterial hypertension, family burden, diseases metabolism (diabetes and obesity), heredity, sedentary lifestyle, etc.

Fig. № 21 **Stressful situations in recent years**



In the last one year, 46.00 % of the respondents experienced stress related to the loss of a loved one/death, or divorce, 25.00 % experienced stress from a loss or change of workplace, 18.00 % experienced other stressful situations, 11.00 % experienced stress from a change of residence. All this has seriously affected their health. Stress is defined as a state of the body that occurs as a result of unusually prolonged irritation. As a result, a large amount of stress hormones are released. Their action is mainly reduced to influencing the functions of the cardiovascular system. Stress hormones increase blood pressure and can lead to heart attack and other cardiovascular diseases.

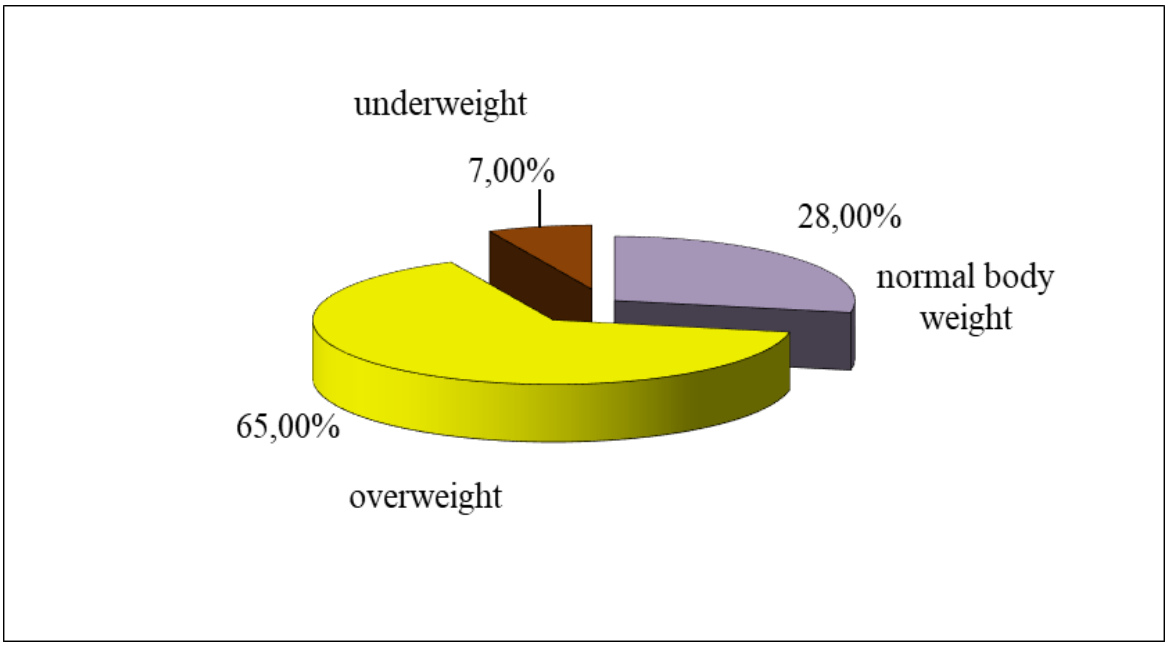
Fig. № 22 **Distribution of respondents according to the mental workload of the profession**



57.00 % of the respondents have mental tension and stress at work. At 43.00 %, their work is not related to mental tension and stress. One of the most stressful places is the workplace: prolonged stress there doubles the risk of Cardiovascular diseases. Particularly dangerous for the heart is the work that is associated with

high demands, with a short time to complete the tasks, with limited right to make a decision and with a poor evaluation of the work. At risk are, for example, people who have low qualifications, have an insecure job, have a choleric boss or unpleasant and treacherous colleagues. This group also includes people with high qualifications who have very high expectations and demands on themselves, are dissatisfied with what they have achieved, and their pursuit of a higher career puts them in a daily stressful situation.

Fig. № 23 **Body weight of surveyed patients**

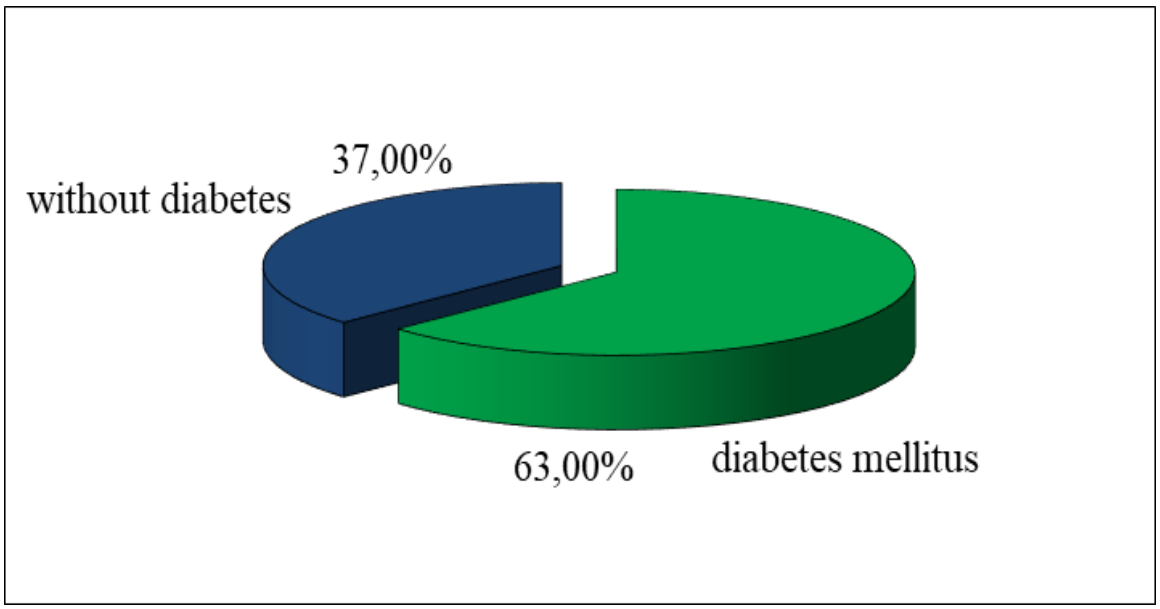


65.00 % of the respondents are overweight, 28.00 % have a normal body weight, and 7.00 % are underweight. Being overweight increases the risk of developing serious cardiovascular diseases. Body weight is an important indicator of a healthy lifestyle, both in healthy people and in sick people. Long-term studies show that in patients with Cardiovascular diseases it is desirable to maintain body weight only within normal limits. Being overweight increases the risk of developing serious diseases, such as atherosclerosis, heart failure, disorders of fat metabolism, etc. It is necessary to improve the functional health status of the

surveyed patients in order to reduce the risk of Cardiovascular diseases. The degree of overweight and obesity is usually assessed according to the body mass index (Body Mass Index - BMI), also known as the Quetelet index, which takes into account height and kilograms and allows comparison of individuals with different builds.

Patients with cardiovascular disease should be well informed and aware of ways to control body weight. Building daily habits that are aimed at a healthy lifestyle is an extremely difficult task, especially when it comes to people of a certain age, but this is the only way to help the patient.

Fig. № 24 **Distribution of patients according to the presence of diabetes mellitus**

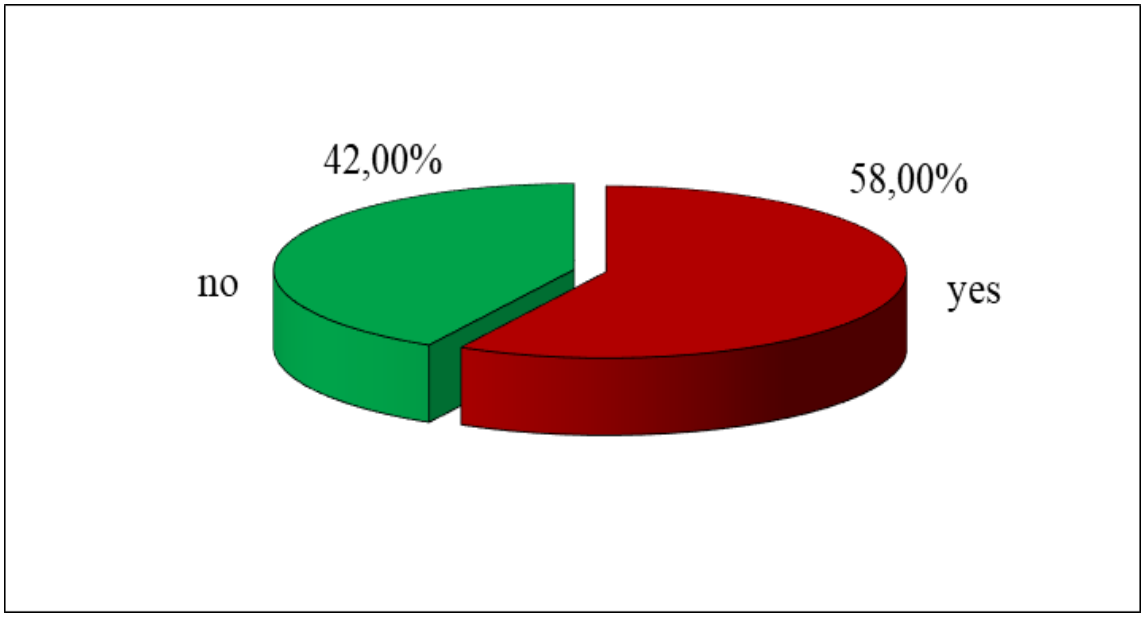


The obtained data show that 63.00 % of patients with Cardiovascular diseases also have an accompanying disease - diabetes mellitus. These data indicate an alarming trend that patients with diabetes mellitus are potentially at risk of cardiovascular disease. Only 37.00 % of the respondents do not have diabetes. Diabetes mellitus is a disease known to mankind since ancient times, and the medical understanding of it has gone through different phases - discovery

- neglect - rediscovery. Diabetes mellitus is a socially significant disease due to its widespread prevalence. Long-term high blood sugar accelerates the development of atherosclerosis. As a result, all large blood vessels in the body become covered with atherosclerotic plaques. This is most pronounced in the blood vessels feeding the heart (coronary arteries), the brain and the lower extremities. Diabetes mellitus is one of the leading risk factors for Cardiovascular diseases.

In the presence of two chronic diseases such as cardiovascular disease, for which the patient is hospitalized and diabetes mellitus, it is especially imperative to teach these patients a healthy lifestyle, which in this case should include, in addition to blood pressure control, also blood sugar control, as well as adherence to a dietary regimen for both diseases.

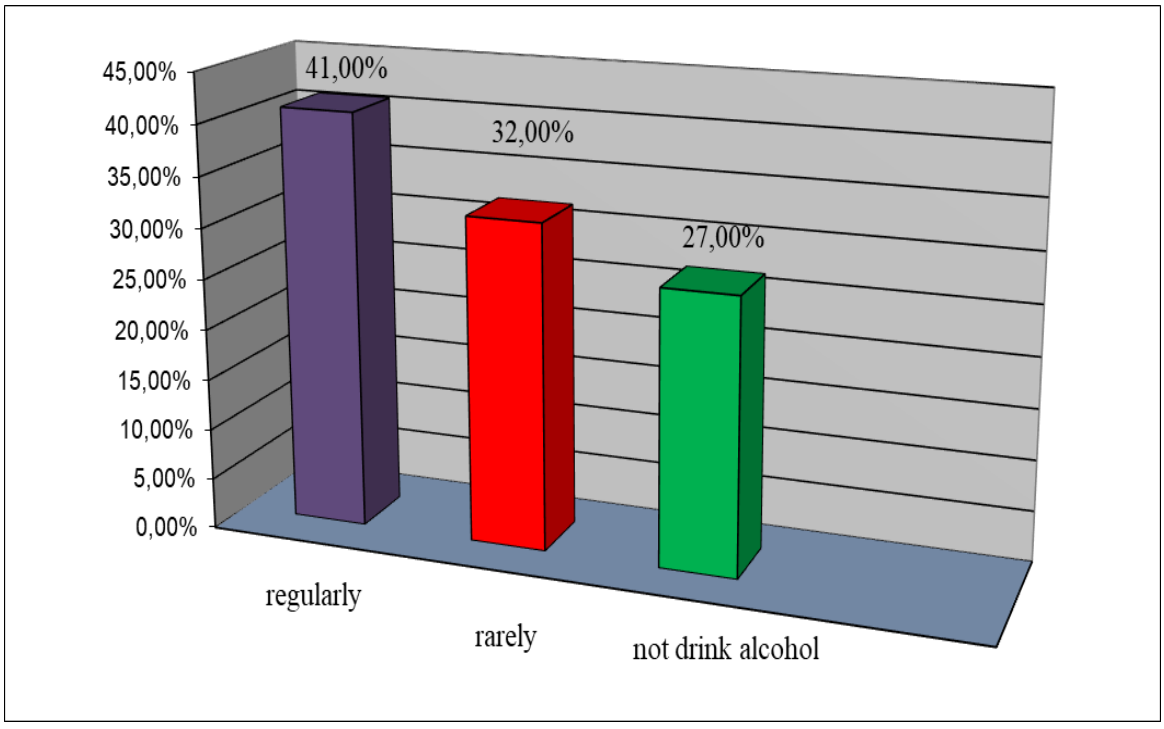
Fig. № 25 **Smoking in patients with Cardiovascular diseases**



From the above data it is clear that 58.00% are smokers. Non-smokers are only 42.00 %. The obtained data coincide with established trends that smoking is one of the main risk factors for the development of Cardiovascular diseases. Smokers are 30 times more likely to develop heart disease than non-smokers. The

use of one or more packs of cigarettes per day increases the mortality from ischemic heart disease twice. Stopping smoking reduces this risk. The risk of Cardiovascular diseases in those who smoke more than twenty cigarettes per day is 2.5 times higher than in nonsmokers, and the incidence of Cardiovascular diseases is more than three times higher in smokers. Smoking increases both morbidity and mortality from Cardiovascular diseases . Ex-smokers are at higher risk of mortality and adverse cardiovascular events than "never smokers". This shows the significant benefit of smoking cessation in Cardiovascular diseases patients, but there is a significant residual risk that is proportional to the duration of smoking.

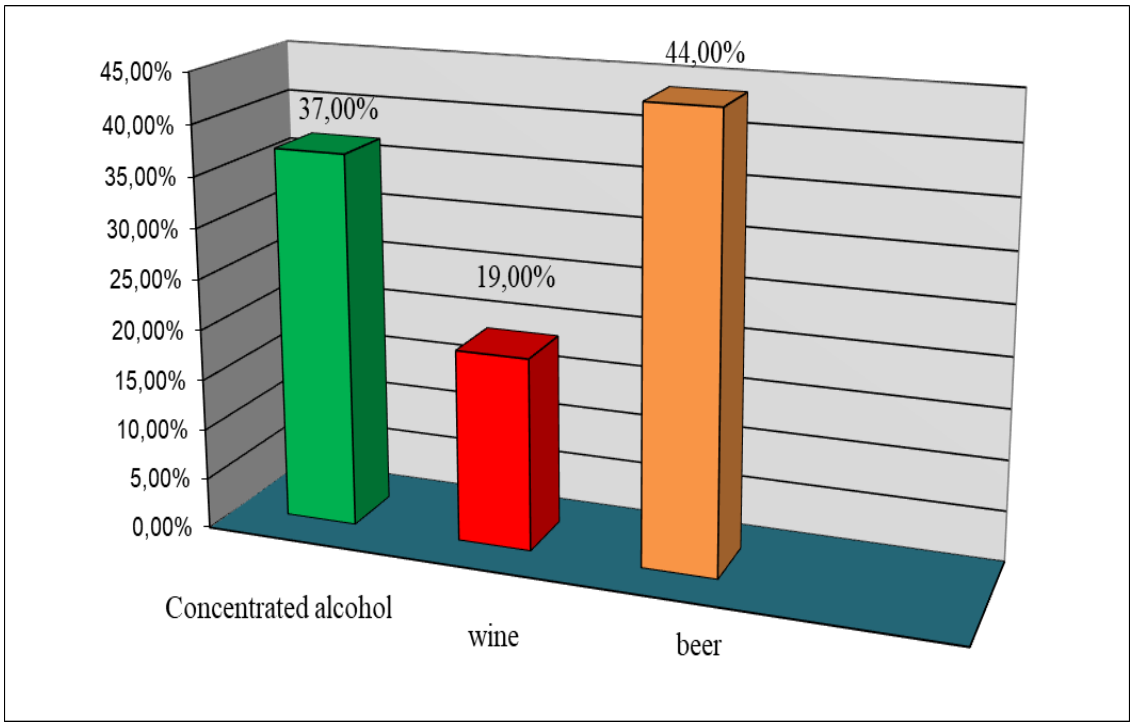
Fig. № 26 **The use of alcohol in patients with Cardiovascular diseases**



According to the data obtained, a significant part of the surveyed patients - 41.00 % regularly, which means daily, consume alcohol. Almost 1/3 of the patients use alcohol very rarely or occasionally, and 27.00 % of the respondents

do not drink alcohol. A high percentage of alcohol users is a risk factor for heart attacks. Once in the body, alcohol quickly enters the bloodstream and remains in it for 6 to 8 hours. The toxic substances present in the composition thicken the blood and prevent its circulation in the small vessels of the heart. This provokes oxygen starvation in the myocardium, due to which the tissues die. All of this leads to an almost immediate increase in blood pressure and heart rate.

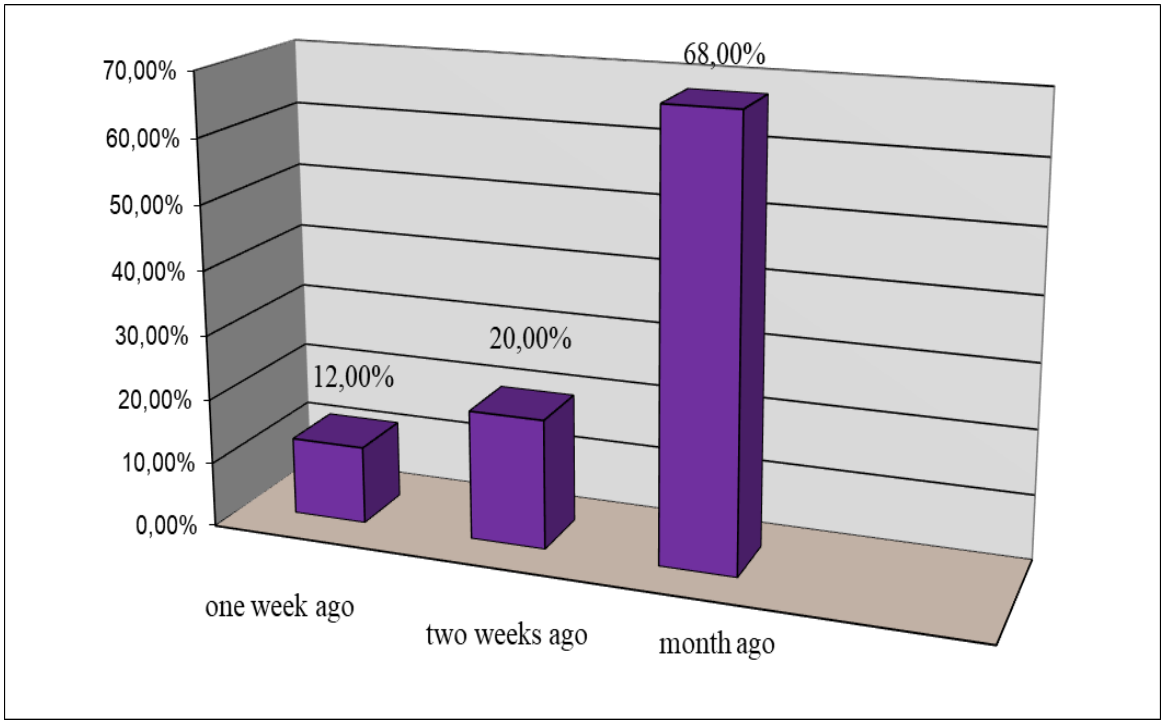
Fig. № 27 **Type of alcohol used**



Almost half of the surveyed patients - 44.00 % consume alcohol and beer on a daily basis. Concentrated alcohol is taken by 37.00 % of patients, and wine by only 19.00 %. Wine can have a good effect on health, but only in small doses - no more than 125 ml. per day and no more than 875 ml. per week. These data show that there is a need to increase people's awareness regarding the negative impact of different types of alcohol on Cardiovascular diseases risk. The type, amount and frequency of alcohol usually consumed are transformed alcohol units

(AU). According to accepted criteria for standardized alcohol intake, one alcoholic AU contains 14 g of pure alcohol, which corresponds approximately to 340 mL of beer, 145 mL of wine and 45 mL of concentrate. The recommendations for safe daily alcohol intake are 1 AU for women and 2 AU for men, respectively.

Fig. № 28 **Distribution of patients according to the period of onset of heart pain**

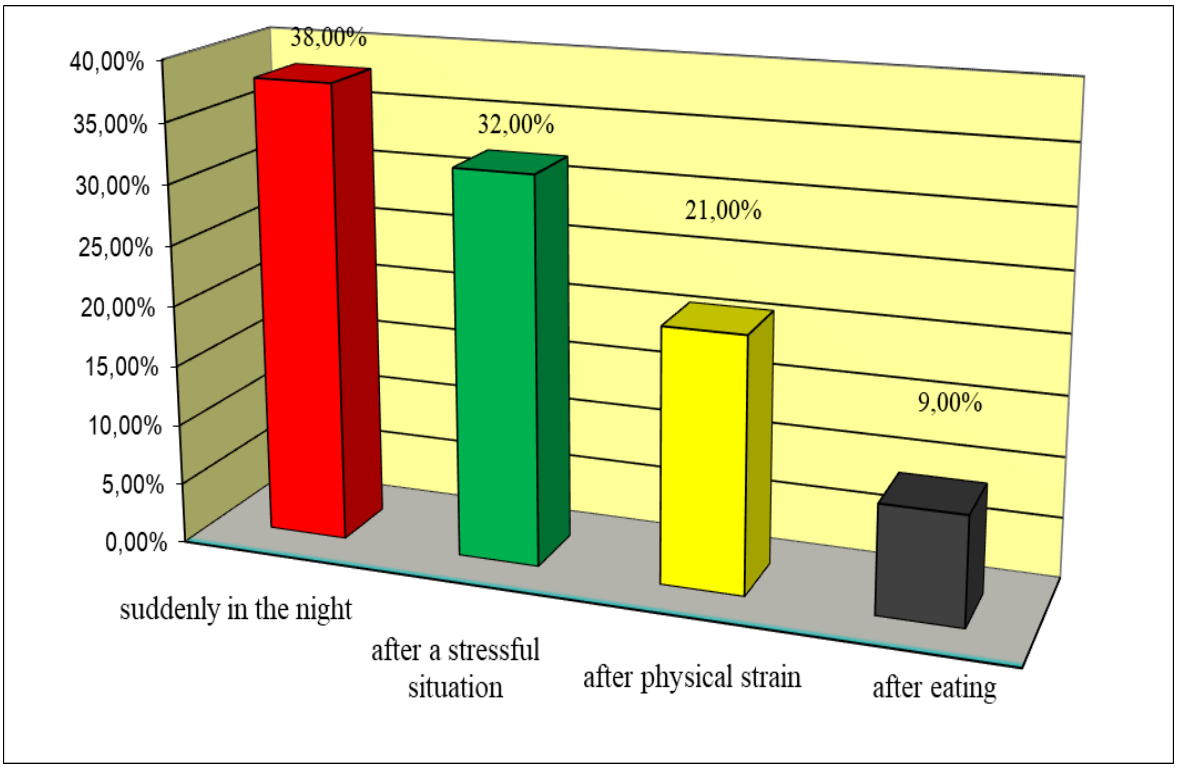


The obtained results show that a significant part of the patients had signs of the impending crisis already a month ago - 68.00%. There were definitely no patients who indicated that the signs and pains appeared in the last days before hospitalization. These data show that when patients are sufficiently informed, they can seek timely medical help and behave appropriately.

Cardiovascular diseases is a life-threatening condition if appropriate measures are not taken. In order to reduce mortality and complications from these diseases, it is necessary for patients to be well aware of the organization of care

and the organization of the clinical pathway, which have been introduced and regulated, and to take all the necessary preventive measures in view of the seriousness of Cardiovascular diseases.

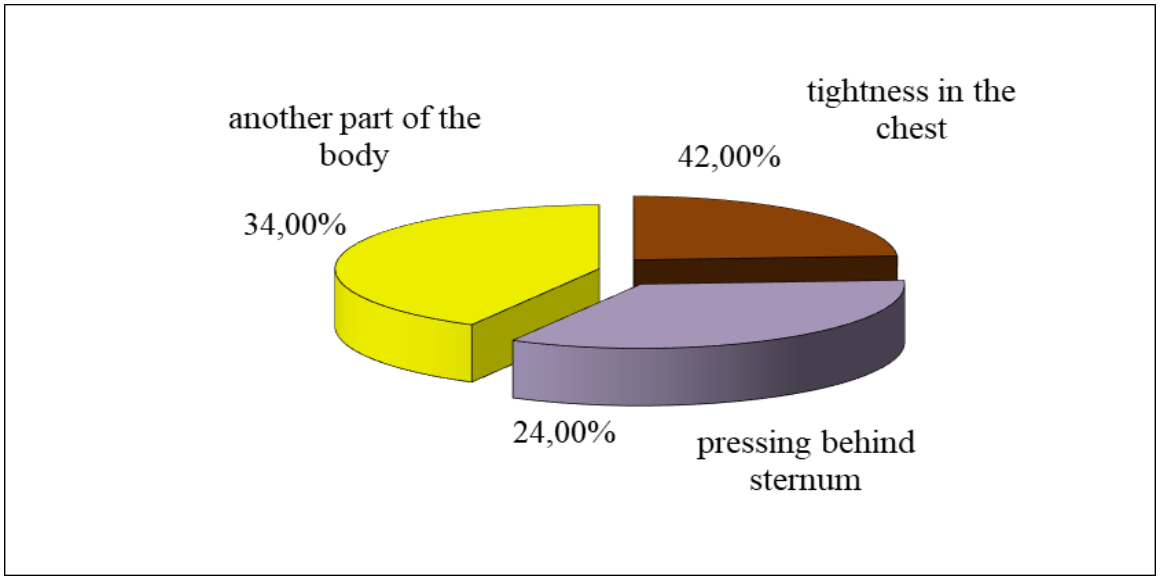
Fig. № 29 **Conditions for the occurrence of heart pain**



According to the conditions under which the angina pain occurs, the results of the patients' responses show that the relative share of patients in whom it occurs suddenly - at night - is the largest, 38.00 %. After a stressful situation and mental strain, 32.00 % of the respondents got angina pain, after physical strain - 21.00 %. Only in 9.00 % the pain occurs after eating. These data are indicative of the conditions and timing in which acute coronary disease occurs. During the attack, patients feel weak, sometimes have nausea, vomiting, belching, copious salivation or dry mouth. A characteristic feature is that the pain is aggravated by lying on the back, relieved by a stationary position. The attack ends as suddenly as it began, and may be followed by eructations or urges to go with great or little necessity.

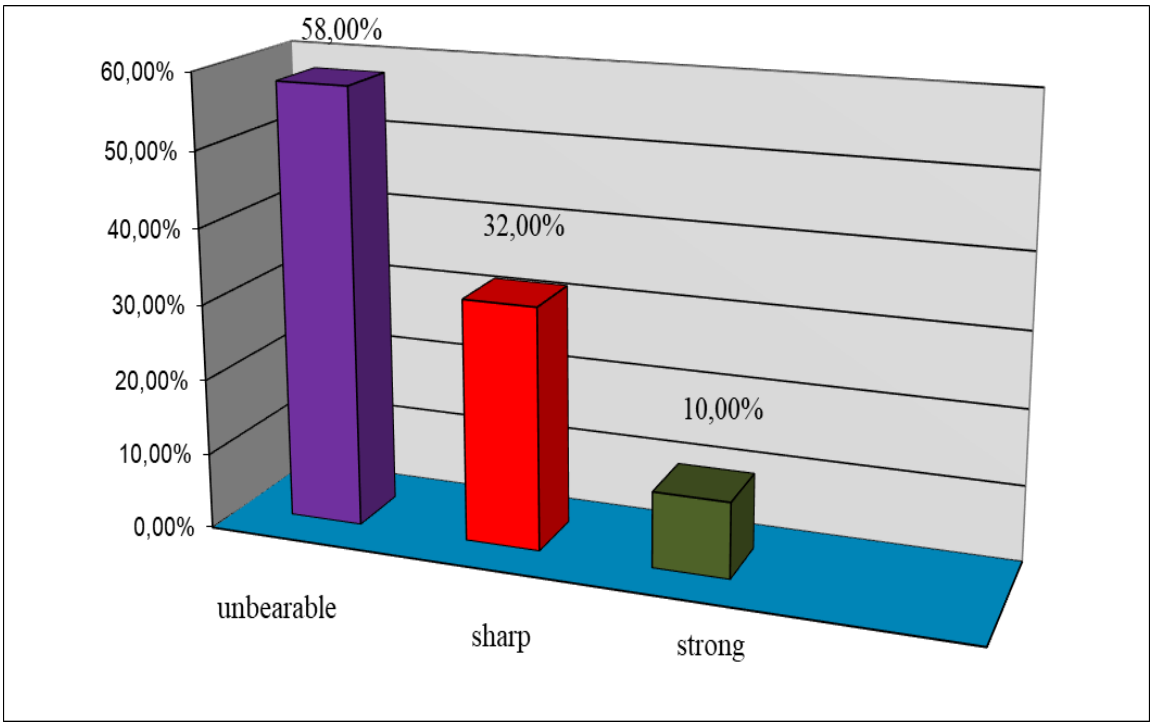
Most often, the attack begins at night. These attacks are considered more dangerous, as they indicate that the disease has become very serious and that urgent measures need to be taken. The duration of the pain is from a few seconds to a few minutes. After resting or placing a nitroglycerin tablet under the tongue, the pain goes away, but it can recur after different time intervals.

Fig. № 30 **Distribution of patients according to the site of pain**



The data show that the relative share - 42.00 % of patients who experienced chest tightness is the largest. The pain is strong, tightening, "crushing" accompanied by shortness of breath. 34.00% had pain in another part of the body. Characteristic of Cardiovascular diseases of the heart is a feeling of pain that may spread to the forearms, neck, jaw, abdomen or back. Pressure behind the sternum was felt by 24.00 % of the respondents.

Fig. № 31 **Distribution of patients according to pain intensity**

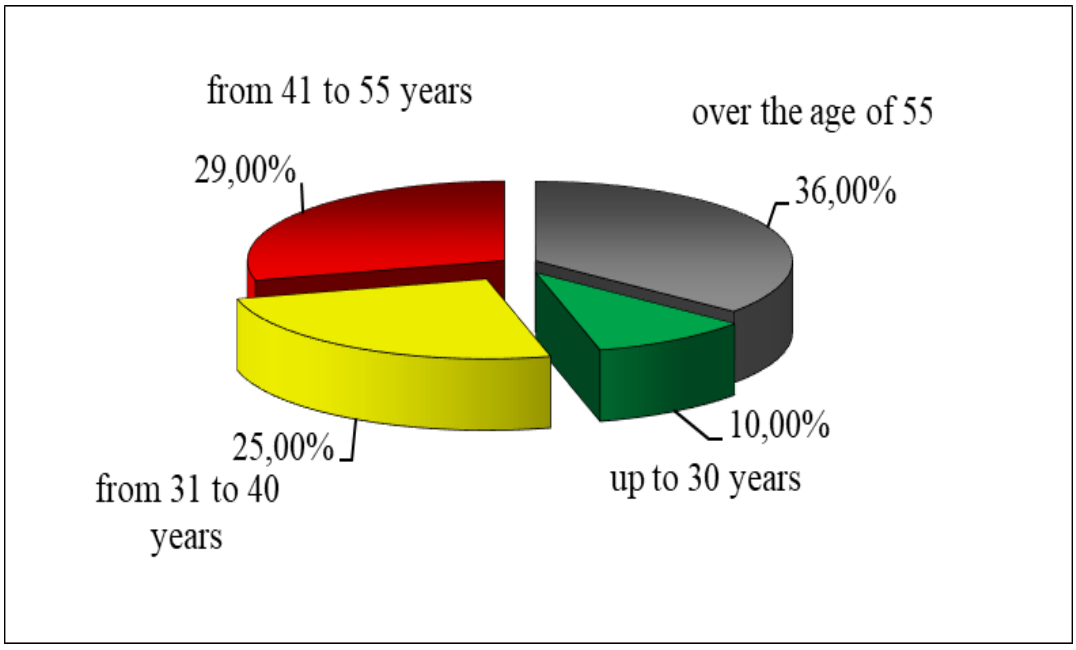


Definition - pain is an unpleasant feeling and emotional experience associated with the present or potential danger of tissue injury. It is always a subjective feeling and is what the patient describes, not what others think it should be. According to the majority of patients - 58.00 % - the pain is "unbearable". 32.00 % indicated that the pain was sharp and 10.00 % strong. Patients experience a feeling of indescribable fear of impending death, paleness of the face and covering it with cold sweat. Shortness of breath is also a characteristic feature of pain in patients with Cardiovascular diseases, they have a feeling of pressure in the chest area. It tends to change progressively in frequency, strength, duration, localization and distribution.

Optimizing nursing care for patients with Cardiovascular diseases

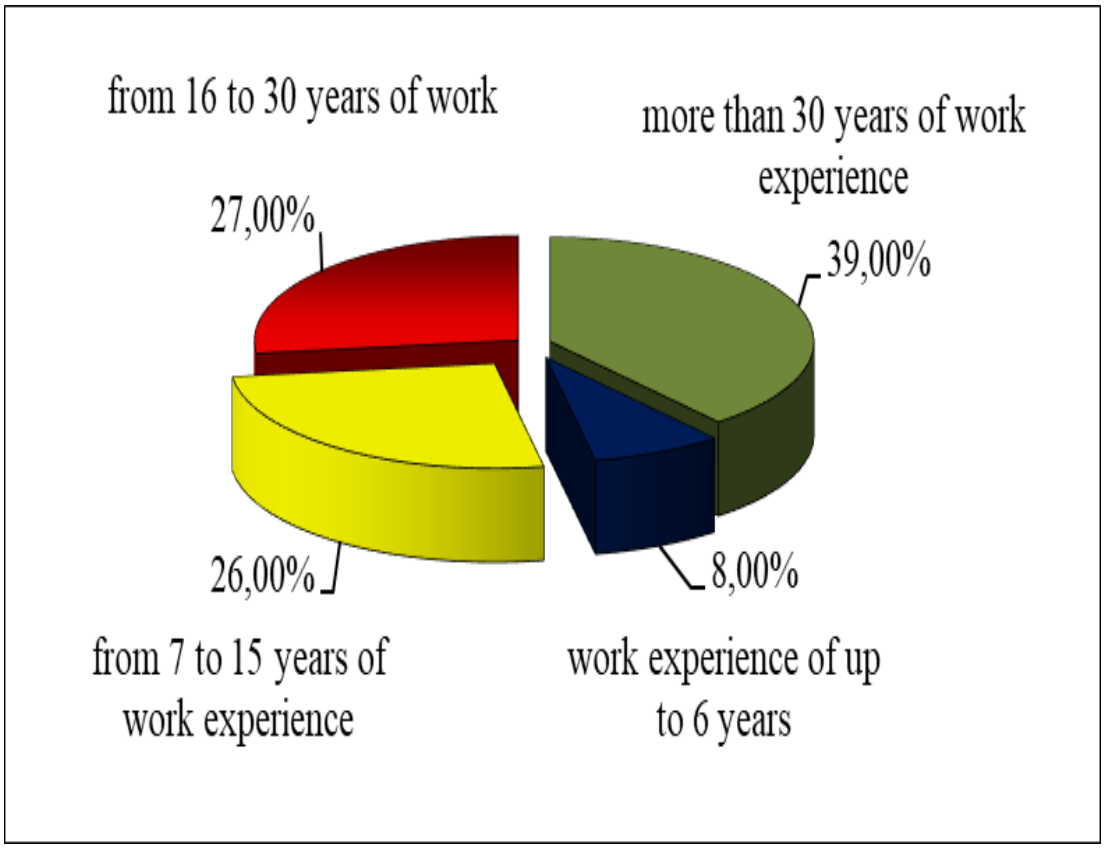
Nurses are the largest occupational group within the healthcare system. The scope of nursing practice is changing dynamically in response to health needs and requires the development of new knowledge and technologies to ensure better health outcomes. Optimizing nursing care for patients with cardiovascular diseases is an important and responsible stage of the treatment-diagnostic process. A priority in the work of nurses is the formation of professional behavior and the construction of professional skills that show their responsibility in terms of making professional decisions, and not just providing a certain volume of activities. All this would ensure an increase in the quality of their care and would help to optimize care for patients with Cardiovascular diseases. Today, nursing is an organized, socially recognized and respected profession that has gone through various stages of development.

Fig. № 32 **Distribution of surveyed nurses by age**



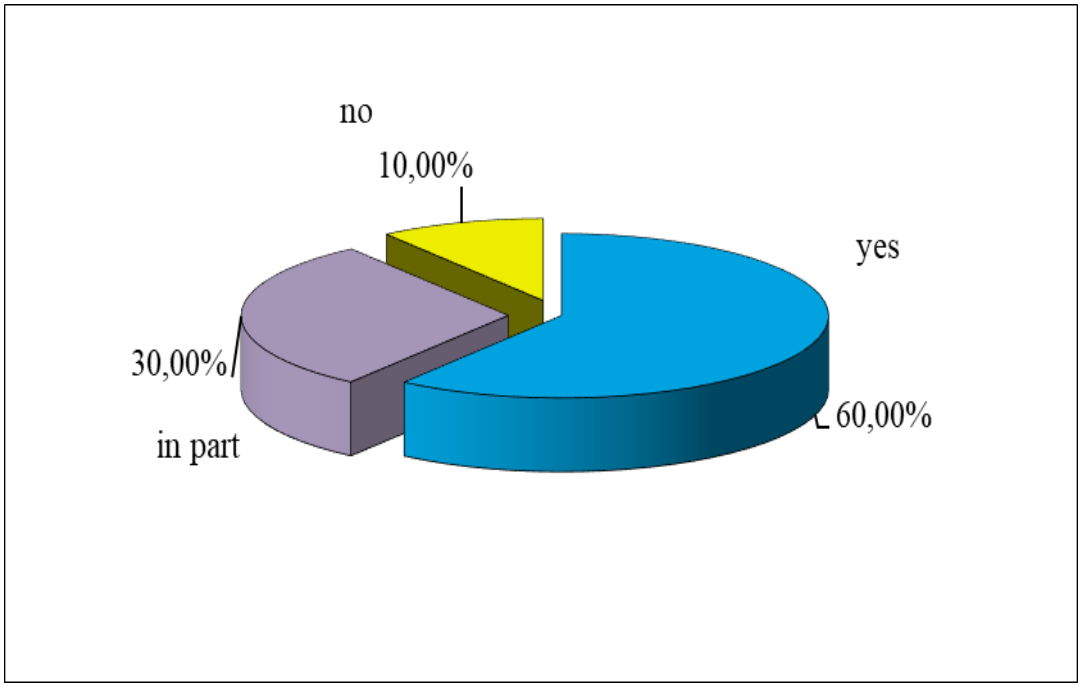
36.00% of the nurses surveyed are over the age of 55, which is explained by the shortage of healthcare professionals, as well as the low pay for the profession. This is definitely a reason for the outflow of personnel from the health care system. 29.00 % are aged 41 to 55. These are nurses of active working age who have found their vocation in working with Cardiovascular diseases patients. 25.00 % of the respondents are aged 31 to 40. These are already established specialists with rich theoretical and practical experience, and they see their future vocation in this profession. Only 10.00 % of the respondents are under the age of 30. This low percentage indicates a worrying trend for the prospects of attracting and retaining young personnel to the profession.

Fig. № 33 **Distribution of respondents by work experience**



The largest is the relative share of respondents with more than 30 years of work experience - an indicator of an aging human resource in the profession. Only 8.00 % have work experience of up to 6 years, who have not yet realized the importance of the profession and the desire to remain in the field of healthcare.

Fig. № 34 **Availability of regulated and clear indicators for monitoring the general condition of patients with Cardiovascular diseases**



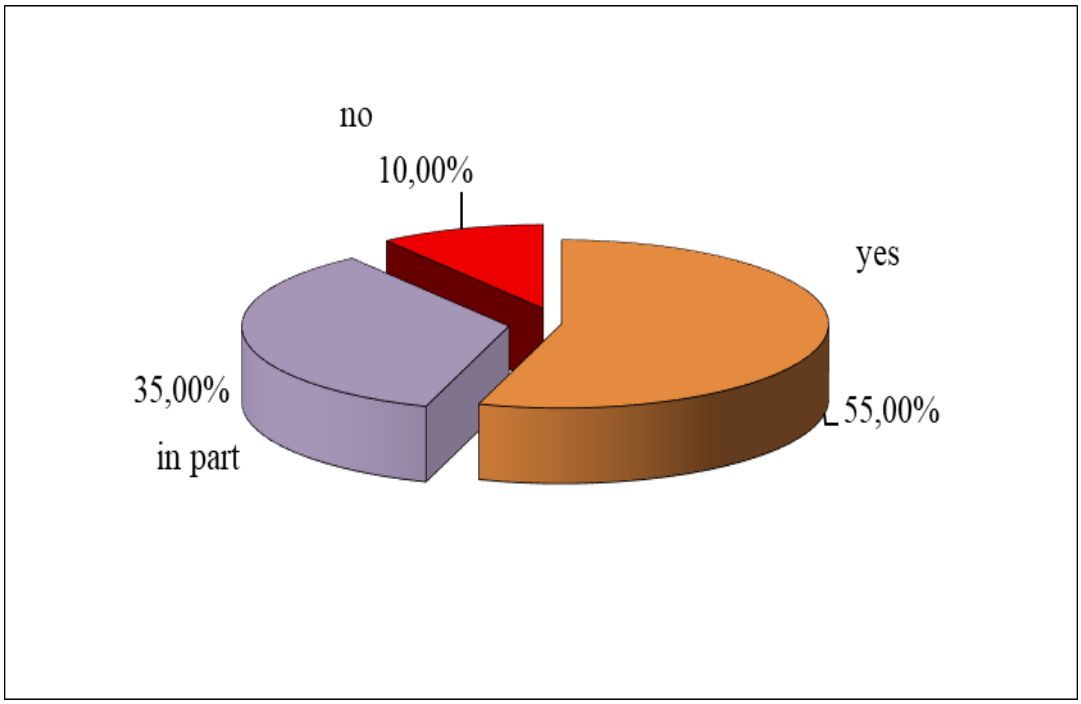
Indicators for monitoring the general condition of patients with Cardiovascular diseases include: gender; visible age; mental state; height; development of bone and muscle systems; body posture; movement; security and body mass; condition of the skin and mucous membranes; body temperature; hereditary diseases and disease predispositions.

Anthropometric measurements that include: body mass, height, head circumference, chest circumference, fontanelle dimensions and tooth eruption.

Somatic indicators - measurement and registration of temperature, pulse, arterial pressure, breathing, monitoring of urination and defecation.

According to the largest part of the surveyed health care specialists - 60.00%, there are regulated and clear indicators for monitoring the general condition of patients. 30.00% indicate that only partly these indicators are precisely and clearly regulated, and according to 10.00% they do not exist. There is a need to optimize care for patients with Cardiovascular diseases – a process requiring continuous monitoring, intervention, assessment, analysis and control by the nurse.

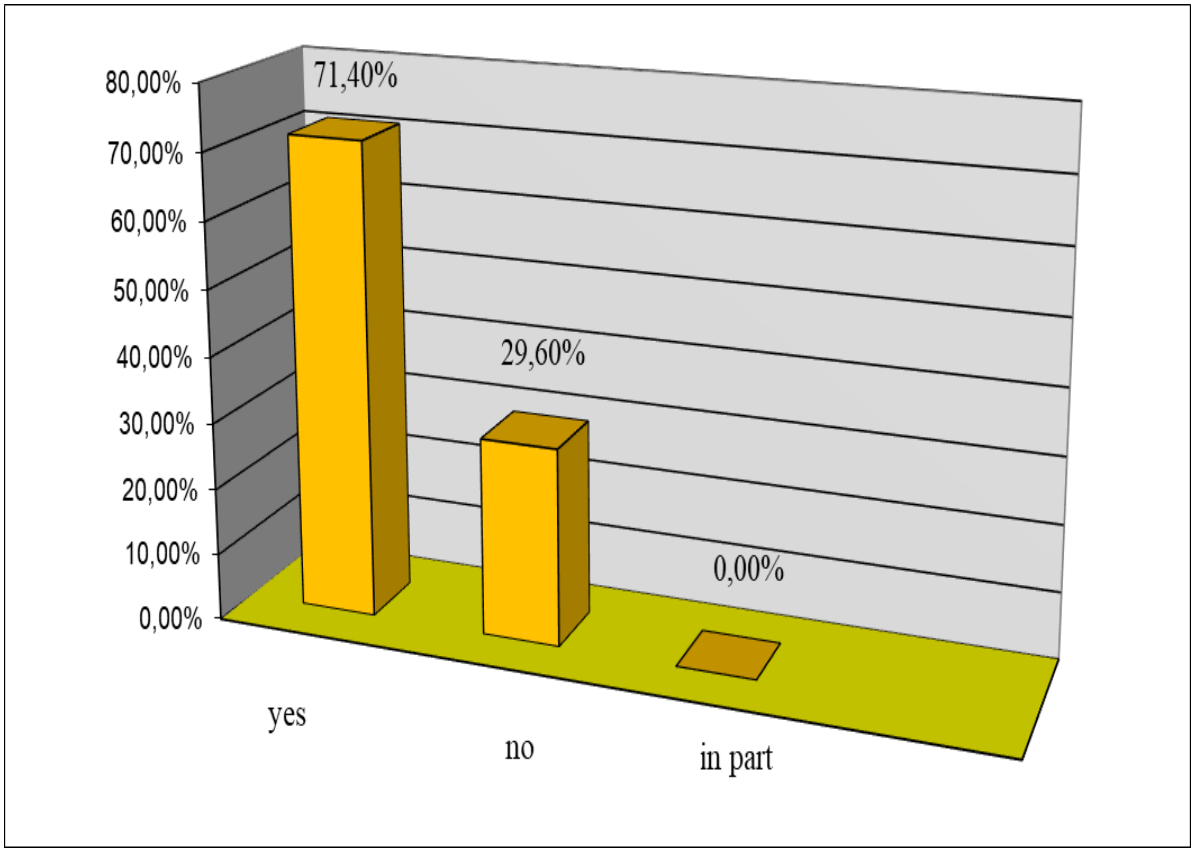
Fig. № 35 **Opportunities for developing a nursing plan care for a patient with Cardiovascular diseases at the existing organization**



The data from the conducted survey show that 55.00 % of the respondents create an individual plan for nursing care of the patients admitted for treatment. In 35.00 % it is partially developed and 10.00 % does not develop such a plan. This means that in order to carry out the care according to a pre-made plan, it is necessary to make a serious change in the organization and to precisely and clearly regulate these activities. In the current forms of education, the criteria for

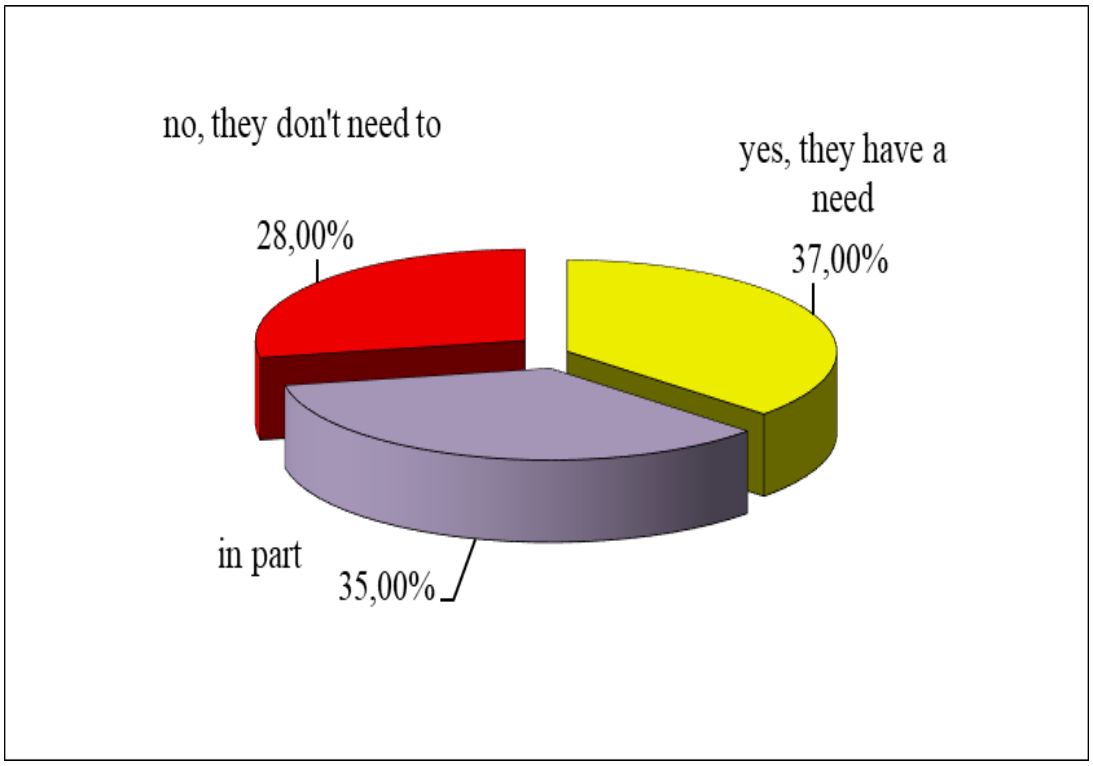
developing an individual plan for nursing care are precisely and clearly regulated in the curricula of the students of the "Nursing" specialty.

Fig. № 36 **Nurses' self-assessment regarding their education about Cardiovascular diseases care**



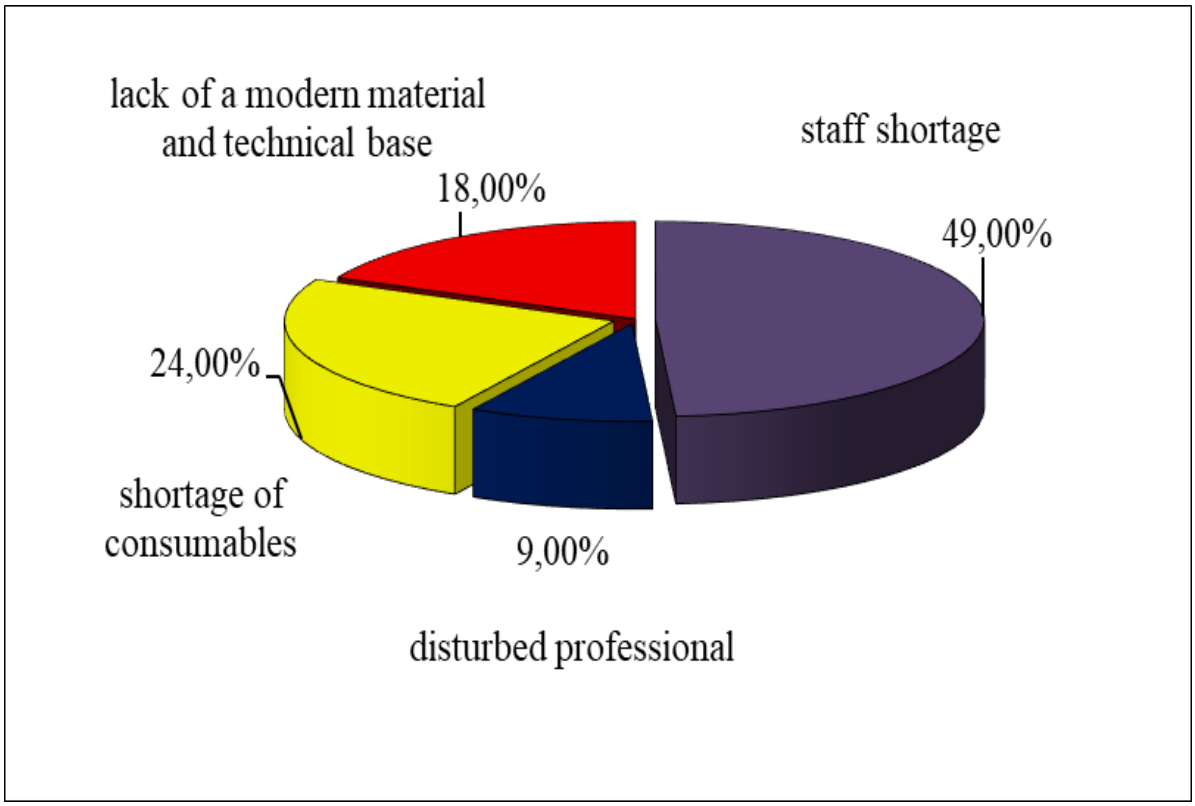
According to a significant part of the nurses - 71.40 %, they possess the necessary knowledge and qualification regarding the care and individual needs of patients with Cardiovascular diseases. According to 29.60 % of the respondents indicated that they had partly undergone specific training regarding the care of these patients. There are no negative answers to the question.

Fig. № **37** **Need for additional qualification**



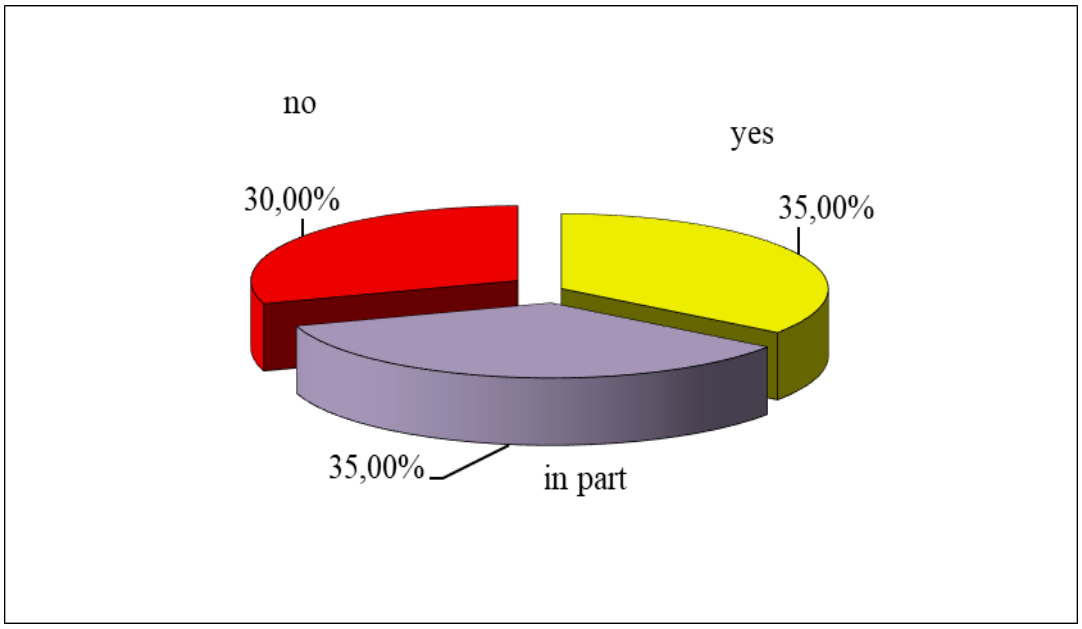
The largest percentage of respondents - 37.00 % definitely need additional training for working with these patients due to the specifics of their general health condition. They realize that the rhythm imposed by changes in health care and in particular in health care will help to convince them of the need for continuous training and upgrading of their qualifications. 28.00 % gave a negative answer to this question.

Fig. № 38 **Presence of factors complicating the activities of nurses in patients with Cardiovascular diseases**



Nearly half of the respondents indicated the lack of staff as the main reason for difficulty in working and carrying out nursing activities. The number of nurses should be adequate to the number of patients with Cardiovascular diseases, and in view of these severe diseases, it is necessary for one nurse to serve a smaller number of patients. The disturbed psycho-social climate leads to - 9.00 %. New ways and more rational means are constantly being sought to improve the material and technical base and the rhythmicity of supply of consumables. The managements at all levels and structures of the medical institutions strive to solve the problems accumulated over the years in order to improve the quality and optimization of health care.

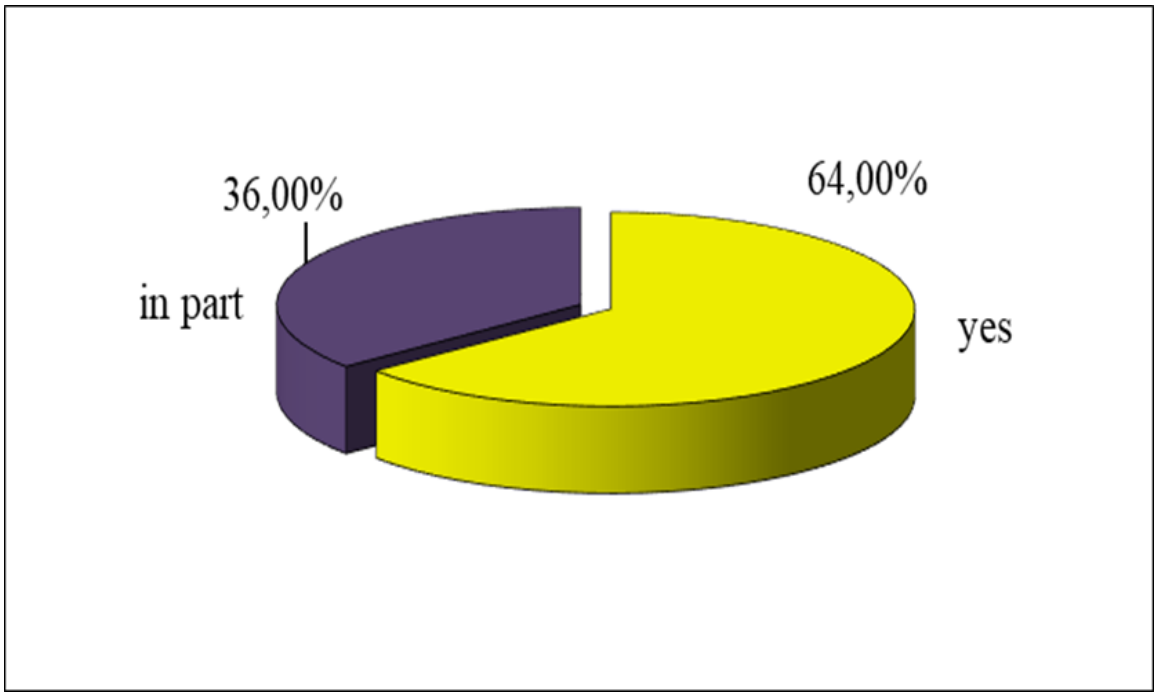
Fig. № 39 **Readiness and skills of nurses to work with innovative technologies in patients with Cardiovascular diseases**



The creation of an organization of health care in hospital structures that meets modern requirements is impossible without the introduction of information systems in the work of the nursing staff. 35.00% of the respondents believe that they are fully prepared to work with innovative technologies in patients with Cardiovascular diseases. The percentage of indicated answers is the same - in part. The introduction of information systems in the field of care is of particular importance and necessity, but problems would arise due to the fact that about 1/3 of nurses in hospital structures experience difficulties in working with innovative technologies. It is definitely necessary to introduce staff training with information systems in the field of health care to process patient information, and a certain period of adaptation to innovative methods.

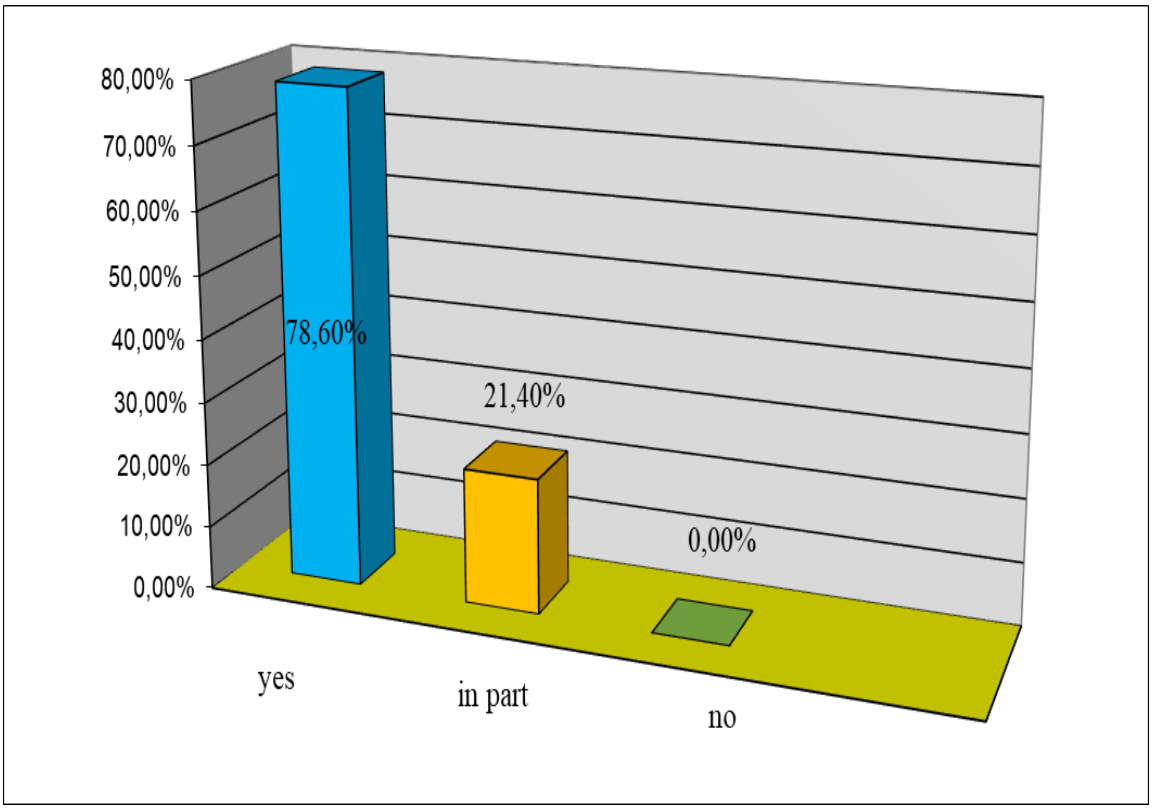
The main professional activities of nurses are aimed at caring for the patient and carrying out the examinations and drug therapy prescribed by the doctor, but at the same time it is necessary to register, send and store certain information about the patient.

Fig. № 40 **Making mistakes due to the lack of an optimized and efficient information system**



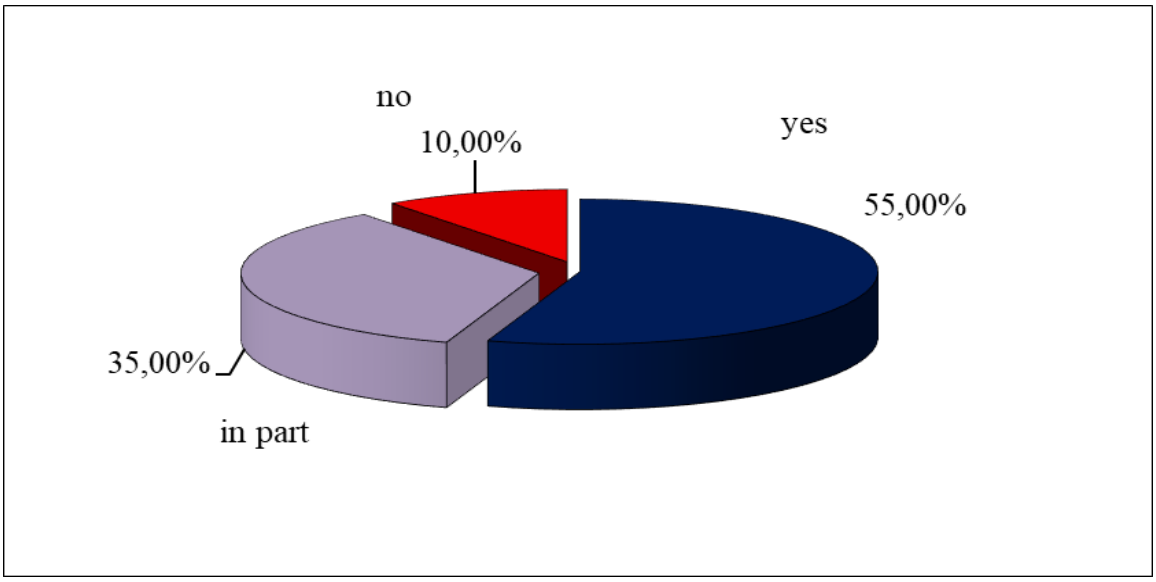
36.00 % of the respondents believe that it is possible to make mistakes due to the lack of an optimized and effective information system. With one, their work will be eased, allowing them to focus on their core business. These data show that errors are not absent in nursing practice, but the lack of an effective information system does not allow proof and registration. Much of the information about patient care is not recorded, and this leads to a greater workload for nurses, as well as the inability to determine their professional responsibility. A change in the organization of hospital care can be implemented in the direction of greater efficiency if a specialized information system is introduced, supplementing the general hospital one.

Fig. № 41 **Spending significant time completing paperwork by hand**



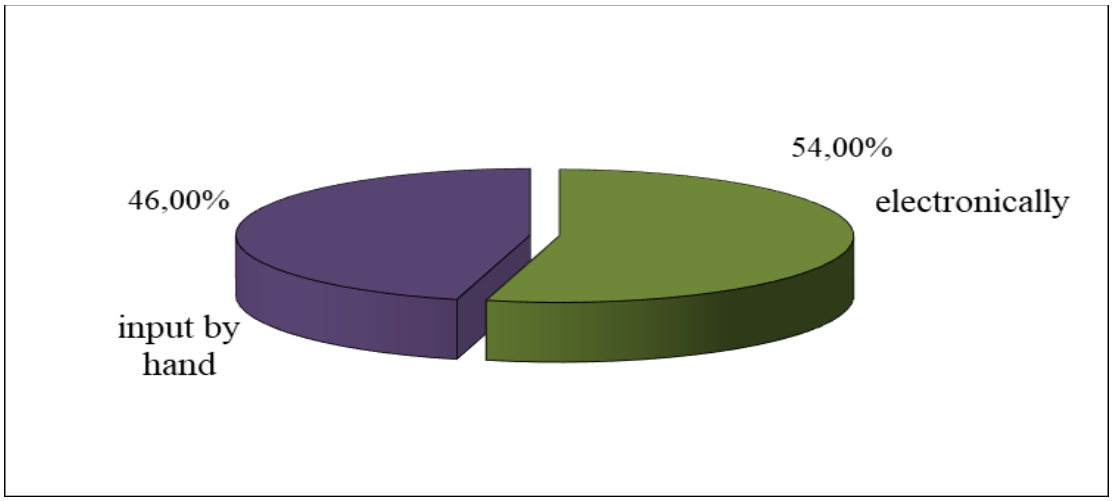
The majority of the surveyed nurses - 78.60 % - are of the opinion that during a large part of the duty they spend a considerable amount of time filling in documentation and that by hand, and not through a computer or information systems. 21.40 % of the respondents gave a partial answer, and no one gave a negative answer. With modern forms of computerization and information provision of medical documentation, it is unacceptable for a modern nurse to spend so much time filling out documentation by hand. Modern reforms in the health care system require health care professionals to use their competencies for the individual needs of patients, which undoubtedly requires easing their work through the introduction of innovative technologies.

Fig. № 42 **Reducing the commitment of nurses when implementing an effective information system**



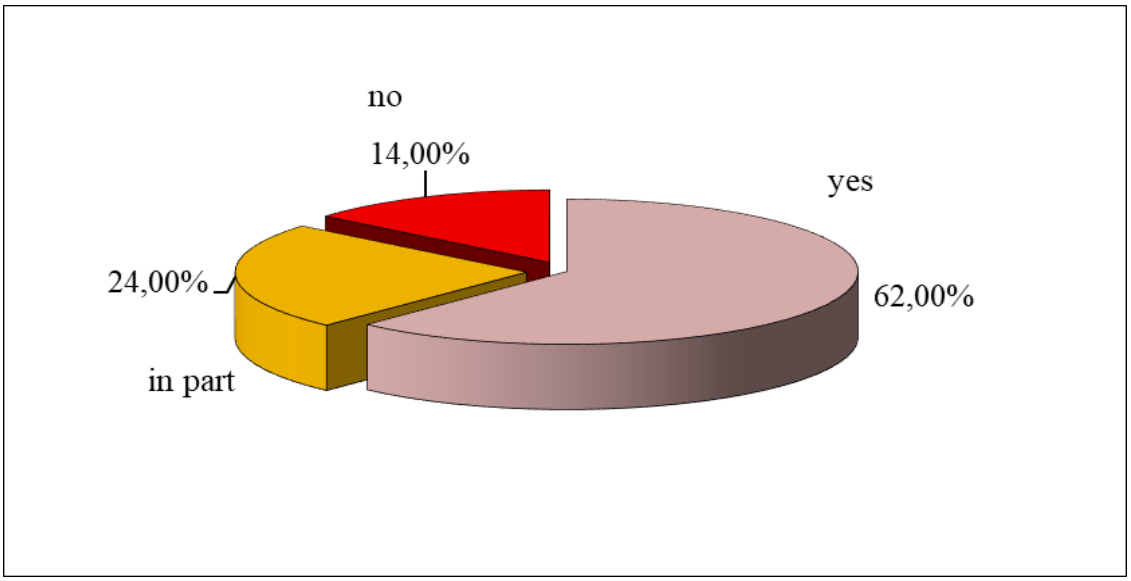
The introduction of an optimal information system for the work of nurses in patients with Cardiovascular diseases is a tool for their activity not only as a technical secretary, but is part of the organization and treatment of patients.

Fig. № 43 **Ways to store and use information, related to Cardiovascular diseases nursing care**



54.00 % of the respondents use various specialized computer programs regarding: patient data, given appointments for examinations and consultations, monitoring of somatic indicators, manipulations, diet, etc. the rest of the respondents - 46.00 % enter the information manually and thus spend considerable time writing by hand.

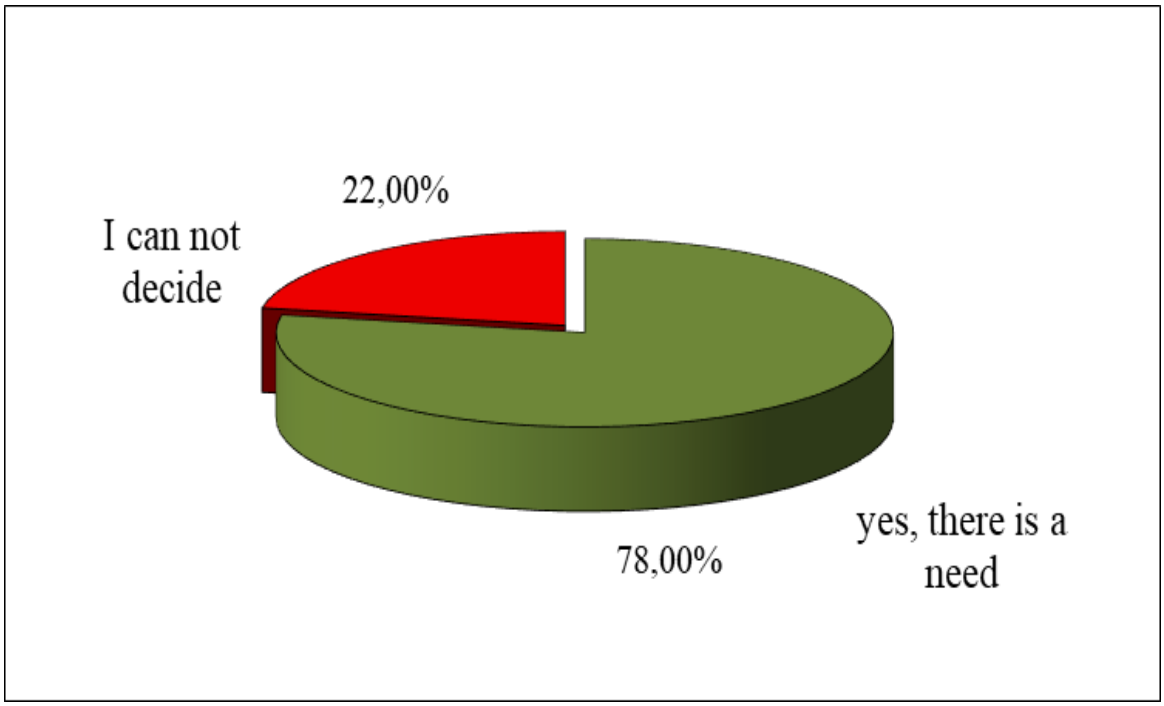
Fig. № 44 **Need to change the organization of care to reflect priorities related to patients with Cardiovascular diseases**



The change in the organization in the work of nursing care is necessary to respond, on the one hand, to the specifics and needs of patients for care, and on the other hand, to create conditions for the staff to provide quality and effective care. Modern hospital care requires certain medical technologies and the quality of the used medical supplies and materials, but good results definitely depend on the created organization and sequence of procedures in the overall treatment-diagnostic process. 62.00 % of the respondents definitely believe that it is necessary and urgent to optimize the organization of the work of nurses for patients with Cardiovascular diseases. The organization of nursing care should

allow nurses to provide adequate care for the patient, depending on his general condition, measurement of indicators, and examinations and appointments planned by the attending physician. This requires nurses to be able to perform both their autonomous functions and those prescribed by a physician in accordance with the patient's condition. Need to introduce an information card of nursing care for patients with Cardiovascular diseases.

Fig. № 45 **Need to introduce an informational approach to nursing care for patients with Cardiovascular diseases**



Today, the understanding that nursing is not only a technique, the execution of manipulations and activities according to the prescriptions of the doctor, but a broad humane profession related to the care of the person, sick or healthy, to preserve his health. The results obtained from the questionnaire survey among nurses show the readiness and the need to introduce an information scheme of nursing care for patients with Cardiovascular diseases - 78.00 %. It reflects all stages of implementation of nursing care and integrates all information about the

patient, which allows quick retrieval of the necessary medical and diagnostic information. Only 22.00 % cannot judge.

The nurse takes care of the patient until his complete recovery and restoration of his normal functioning. Nursing care is given to a person to meet his basic vital needs when he is unable to do so himself. These cares are taken in every period of a person's life and are related not only to the given disease, but also to its prevention. The nurse must always consider the individual characteristics of the patient.

Promotional and preventive health care for patients with Cardiovascular diseases

Promotional and preventive health care for patients with Cardiovascular diseases is a priority task embedded in the overall activity of health care specialists in order to achieve effective results and improve the quality of life of patients with Cardiovascular diseases. Promotional and preventive health care is a set of medical and non-medical measures that are taken to achieve better health and quality of life by isolating the main risk factors, preventing diseases and reducing their consequences. Primary prevention should target risk factors, including health promotion and specific prevention. Prevention is protection that acts even before the manifestation of certain diseases, protection that prevents their appearance, development and complication in an unwanted direction. In modern health care, risk and preventive behavior are key concepts. A number of studies indicate that there is no single cause of cardiovascular disease. Factors increasing the risk or "risk factors" of cardiovascular disease may not be affected or may be difficult to affect, but they may be effectively affected and reversible. If adequate measures are taken to reduce or eliminate the effect of other risk factors. That is why preventive measures to prevent cardiovascular diseases, changes in people's lifestyles and limitation of negative risk factors are of key importance. The main goal of promotional and preventive health care in patients with cardiovascular diseases is to increase disease-free life expectancy and improve quality of life.

Approach to promotional and preventive health care in patients with Cardiovascular diseases

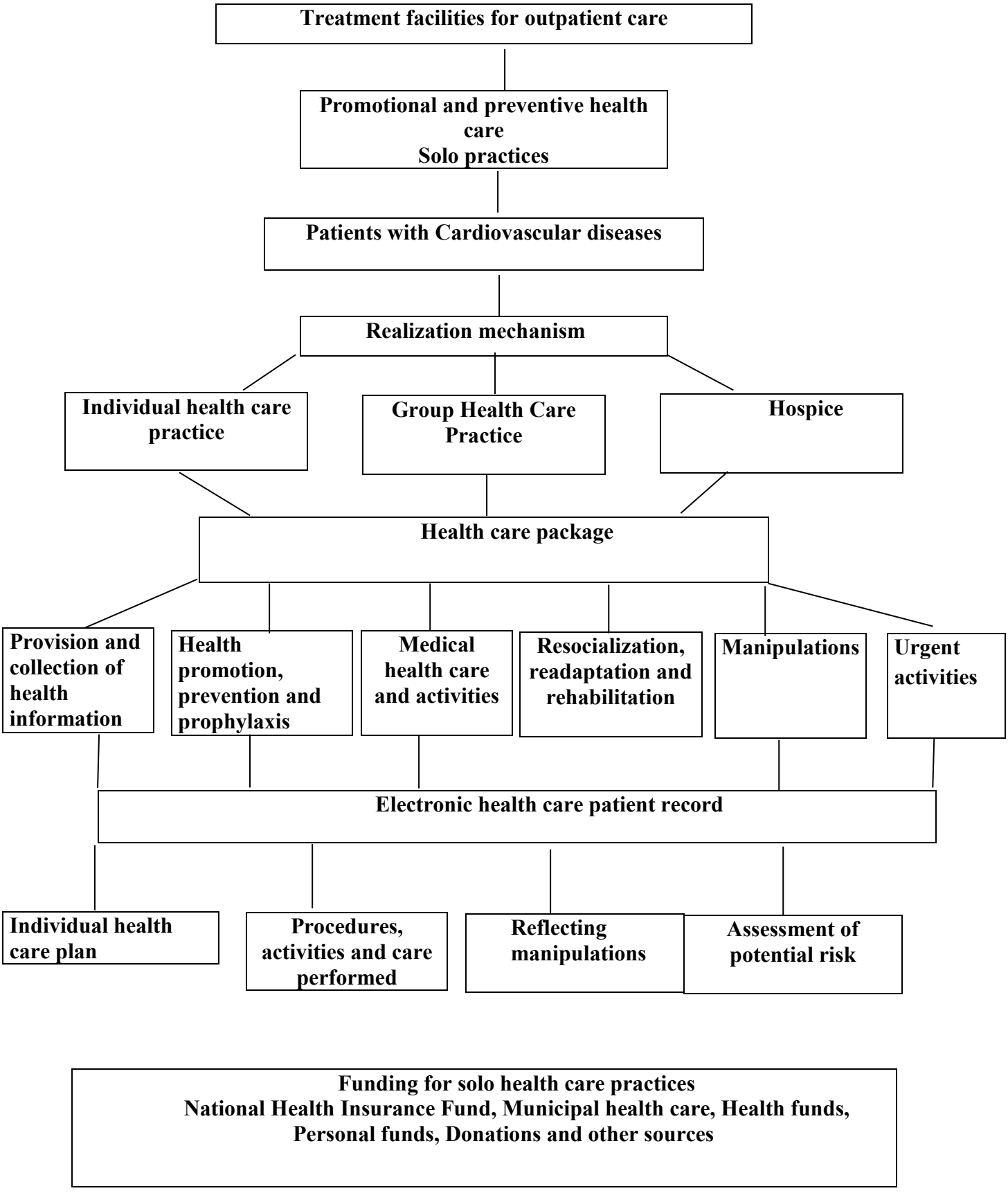
The approach to promotional and preventive health care in patients with Cardiovascular diseases is aimed at the promotion of health, the preservation and restoration of health and quality of life, as well as the prevention of disease and is used by the nurse in every area of her activity. The nursing approach means

consistently changing the actions performed by the nurse in relation to the patient in order to prevent, relieve, reduce and minimize the problems and difficulties arising in him. It consists in determining the care that each patient needs by analyzing his condition, the means of organizing care and interventions, the implementation of activities and the evaluation of results. The nursing process is the framework for the provision of professional and quality health care by the nurse. Applying the nursing process in practice is a necessity that will direct nursing interventions in the right direction. The nursing approach is the framework for the provision of professional and quality health care by the nurse. The application of the nursing approach in practice is a necessity that will direct nursing interventions in the right direction. The nursing approach consists of several successive stages:

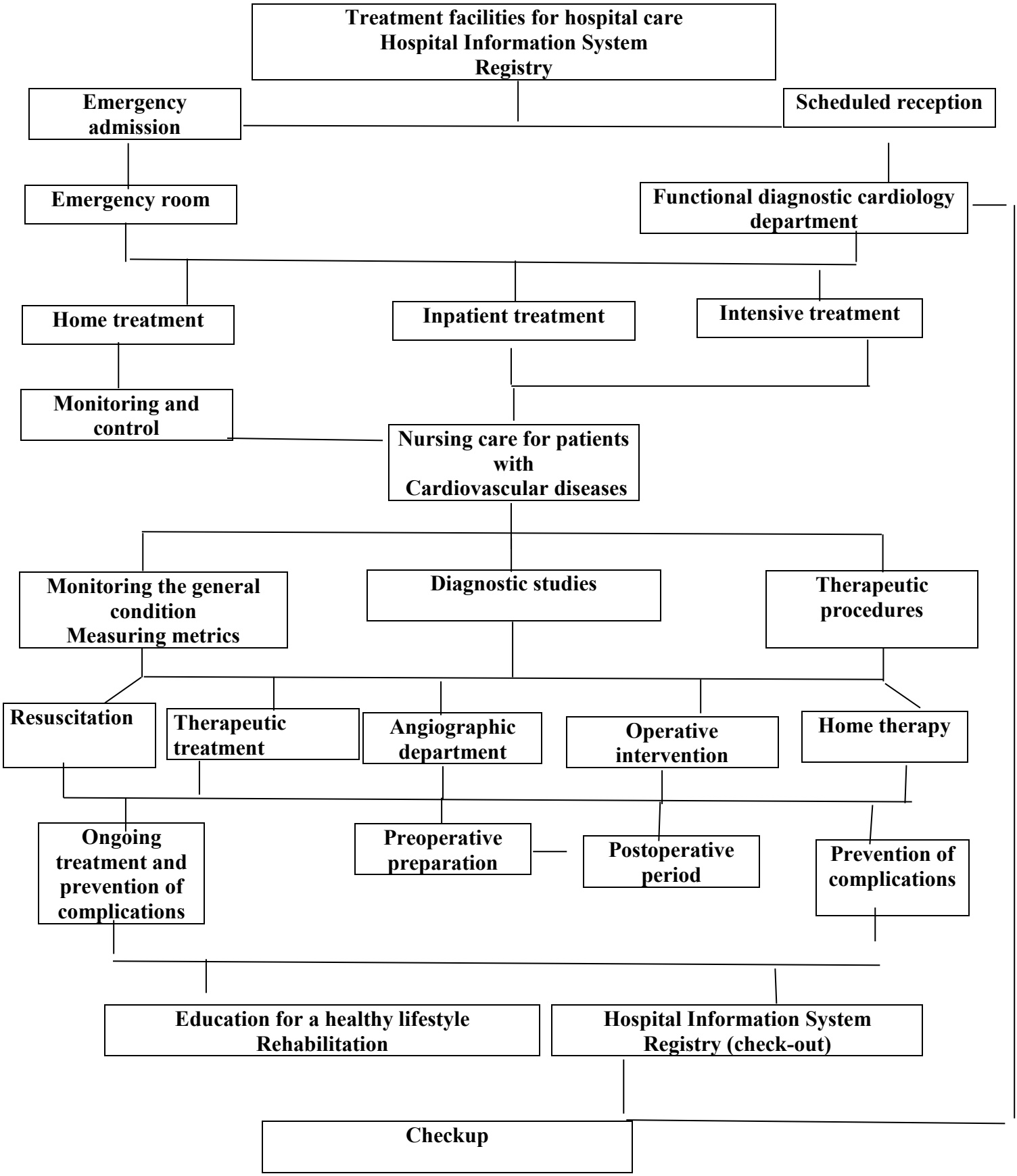
- information (data) collection – the nurse collects information based on a conceptual model of care or based on a standard questionnaire.
- formulation of a problem - analysis of the collected information in order to determine the patient's needs for care or making a nursing diagnosis.
- development of an individual care plan – the nurse develops an individual care plan that contains activities that meet the set goals.
- implementation of the care - implementation of the described activities.
- evaluation - study of the results obtained from the care provided.

Conceptual models are constructed based on theories and concepts to assist nurses in performing and assessing the patient's condition, planning and implementing care within certain professional frameworks. Nursing models include methods and assessment of individual patient needs and determining appropriate care for them. Nursing care is a complex of complex elements and phenomena. Concept is "the ability each of us has to make a familiar object or phenomenon noticeable".

Scheme 1 Schematic model of the nursing approach for promotional and preventive health care



Scheme 1 Approach to promotional and preventive health care in patients with cardiovascular diseases



Organization of health care in monitoring the general condition, measuring indicators in patients with

Cardiovascular diseases

Monitoring the general condition
Measuring metrics

1. Observation, control and behavior of the nurse with patients on a monitor
2. Preparing the patient and performing electrocardiography
3. Nursing care during examination and registration of arterial pressure, arterial hypertension and hypertensive crisis
4. Nursing care related to examining the patient's pulse (bradycardia, tachycardia, ventricular tachycardia, sinus tachycardia, paroxysmal tachycardia)
5. Nursing care in measuring, examining and recording respiration.
6. Oxygen therapy, nursing technique.
7. Nursing technique for measuring and recording body temperature
8. Nursing care in measuring diuresis and relative weight
9. Preparation and performance of bladder catheterization in a woman
10. Nursing care related to defecation examination
11. Hygienic care for patients with Cardiovascular diseases
12. Anti-decubitus dressing
13. Hygienic care of the patient's bed
14. Dietary nutrition in patients with Cardiovascular diseases
15. Pain assessment - a scale for assessing the intensity of pain
16. Entering data into an information card for the reported indicators
17. Monitoring of the patient's condition and control.
18. Entering data into an information card for the reported indicators

Organization of health care for diagnostic tests in patients with cardiovascular diseases

Diagnostic studies

1. Rules for taking, sending and transporting blood for laboratory tests
2. Assisting the nurse in determining blood groups
3. Nursing intervention and behavior when drawing blood for alkaline-acid balance from an arterial cannula
4. Scheduling of assigned studies and consultations
5. Behavior of the nurse in non-invasive research methods
6. Behavior of the nurse in invasive research methods
7. Preparation of the patient for coronary angiography
8. Nursing behavior and health care for patients on the day of performing an invasive study of coronary vessels with stent implantation
9. Preparation and behavior of the nurse when removing an arterial embolism
10. Monitoring of the patient's condition and control.
11. Entering data into an information card for the reported indicators

Organization of health care for carrying out therapeutic procedures for patients with Cardiovascular diseases

Therapeutic procedures

1. Nursing technique for placement and maintenance of a peripheral venous source
2. Nursing activity in the preparation, placement and maintenance of a central venous line
3. Behavior of the nurse in intravenous infusion and perfusion therapy
4. Carrying out the prescribed drug therapy - methods and rules for administering drugs
5. Injection administration of drugs. Preparation for injection, aspiration of medicinal products from an ampoule, vial and bank
6. Behavior of the nurse during intradermal injection. Skin diagnostic sensitivity tests
7. Subcutaneous injection. Nursing behavior
8. Behavior of the nurse when preparing and placing a muscle injection
9. Venous injection – rules and technique
10. Insulin therapy
11. Monitoring of the patient's condition and control.
12. Entering data into an information card for the reported indicators

Informational and documentary provision of promotional and preventive health care for patients with cardiovascular diseases

Care planning is a major part of nursing. It consists in determining the care that is needed for each patient by analyzing his condition, the means of organizing care and interventions, the implementation of activities and the evaluation of results. Health care specialists are increasingly aware of the need for modern informational provision of professional care in hospital structures. It is necessary to introduce modern information systems into nursing practice, through which the following will be achieved:

- Improving the quality of health care
- Reduction of omissions and errors
- Facilitating communication between – health care specialist and doctor; health care professional - patient
- Increasing the efficiency of health care
- Easily accessible and complete medical documentation
- Implementation of control and feedback in the various stages.

All this can be achieved through the use of electronic medical file in which the medical data for each patient is recorded and stored - general health information, data from examinations, treatments carried out, medical interventions, outpatient sheets, laboratory tests, directions and prescriptions issued, data on blood donations, including and of blood plasma, etc. Informational and documentary provision through an approach for promotional and preventive health care in patients with Cardiovascular diseases will lead to more efficient and quality hospital treatment.

CONCLUSION

Health is "a positive concept emphasizing the mental, social and spiritual well-being of the individual and his personal and social resources in addition to physical well-being". Promotion is an organized effort of society to educate the individual related to the problems of personal health and the development of the social system that provides each individual with a standard of living adequate to the maintenance and improvement of his health.

"Health promotion is a process whereby people are empowered to increase control over their health by increasing their personal and societal responsibility" (WHO, Ottawa Charter 1986).

The elements of the promotion include - focusing on the health problems of the general population; targeted actions to eliminate risk factors; supporting the factors leading to better health of the population; encouraging the participation of the society and the individual in defining the problems and making decisions about the targeted activities; support for appropriate health, social and environmental policy; encouraging the participation of health professionals in health education and health support. Promotion is the act of assisting, assisting, encouraging, maintaining, strengthening, enhancing, assisting, affirming health. The focus of health promotion is not on medical facilities, but on people and institutions that would provide conditions for a healthier lifestyle. People are given the opportunity not to be passive consumers of health services, but to exercise better self-control over their own health behavior as a chance for better health. The immediate goal of health promotion is to achieve a change in the behavior of the individual, leading to the strengthening and improvement of health.

Promotional and preventive health care for patients with cardiovascular diseases is a set of medical and non-medical measures that are taken to achieve better health and quality of life by isolating the main risk factors, preventing diseases and reducing their consequences. In modern health care, risk and

preventive behavior are key concepts. The main goal of promotional and preventive health care for patients with Cardiovascular diseases is to increase the duration of life without disease and to improve their quality of life, change in lifestyle and limit the effect of negative risk factors.

In conclusion, it can definitely be said that patients admitted for hospital treatment with Cardiovascular diseases do not lead a healthy lifestyle and a significant part of them have the main risk factors that have been established in cardiovascular diseases - gender, marital status , body weight, stressful situations, family burden, smoking, diabetes mellitus, experienced hypertensive crises. Regarding the awareness of patients with cardiovascular diseases, more than half are familiar and informed about the risk factors and the need to take responsibility for their own health. This shows that, in general, people are informed about the disease and possible complications.

In outpatient care facilities, the activity of independent health care specialists in a team or in coordination with a doctor is an important prerequisite for ensuring access to quality health care and improving collaboration between hospital and outpatient care. Independent practice will enable medical professionals to take on new higher responsibilities in the process of performing healthcare activities in ambulatory settings.

Outpatient care allows for the application of the concept of health promotion and prevention.

There are regulated and clear indicators for monitoring the general condition of patients, but it is necessary to introduce a new approach to promotional and preventive health care, which can be applied to each patient, by analyzing his individual condition, the means of organizing care and interventions, implementation of activities and evaluation of results.

Modern nursing practice is based on theoretical conceptual models that aim to outline the boundaries of the autonomous nursing profession in the implementation of specific nursing care, such as the care of patients with

cardiovascular diseases. Care for these patients must be carried out on the basis of an individual approach to ensure the professional implementation of medical appointments and therapeutic treatment. Modern treatment of patients with cardiovascular diseases definitely requires the introduction of a care approach that meets the individual needs of the patient, in accordance with the introduction of scientific approaches and methods of implementation of health care.

Achieving these goals requires additional qualification and training to work with these patients due to the specifics of their general health condition. It is definitely necessary to introduce staff training with information systems in the field of health care to process patient information.

Applying the approach of promotional and preventive health care to patients with Cardiovascular Diseases is the framework for providing professional and quality health care. Health care specialists are increasingly aware of the need for modern informational provision of professional care in hospital structures. It is necessary to introduce modern information systems into nursing practice, which will improve the quality of health care, will lead to the facilitation of communication between - a health care specialist and a doctor; health care specialist - patient with the aim of increasing the efficiency of health care, carrying out control and feedback in the various stages.

CONCLUSIONS

1. **The distribution of patients by gender shows that the majority of them are men - 63.00%, which shows the predominance of men with Cardiovascular diseases as a regularity.**
2. **The distribution of patients by age shows that patients under 35 years of age are 10.00%, which is a negative trend in recent years. The oldest patient is 90 years old. From 36 to 50 years, the respondents are 18.00%, from 51 to 65 years are 31.00%. The relative share of patients over 65 is the largest. These results show that the most at-risk group for this disease are people over 65 years of age.**
3. **Informedness of the surveyed persons regarding hereditary Cardiovascular diseases - 54.00% report that they have information about cardiovascular diseases of their parents and relatives. 13.00% of the respondents lack information about cardiovascular diseases in the family. 33.00% of the respondents have no information about cardiovascular diseases in their family, or do not know about existing ones.**
4. **Referral of patients for hospitalization - the largest number of patients were referred by a general practitioner - 46.00%, admitted after their admission to another hospital - 22.00%, and by a Cardiologist - 24.00%. Self-referred patients are 8.00%. The initial referral of patients for hospitalization is not linked to the leading diagnosis, resulting in inefficient use of health care resources and delaying and increasing the cost of treatment.**
5. **The distribution of patients according to their stay in the Cardiology Clinic shows that only 25.00% of the patients included in the study stayed in the Cardiology Clinic for up to 3 days. From 4 to 7 days – 34.00%, from 8 to 15 days – 22.00%. The shortest stay of patients over fifteen days is 19.00%.**

6. **Patients' awareness of Cardiovascular diseases - 55.00% are aware and informed about the risk factors and the need to take responsibility for their own health. There are no negative answers to this question. This shows that, in general, people are informed about the disease and possible complications.**
7. **Patient awareness of Cardiovascular diseases risks and complications – 28.00% lack information regarding the risks and complications that may occur as a result of existing Cardiovascular diseases. A positive answer to this question was indicated by 32.00% of the respondents, and 40.00% - they were "partially" informed.**
8. **Distribution of surveyed patients by region in the examined hospitals - the largest number of patients is from the city of Sofia and Sofia region - 52.00%. These are the majority of patients in the hospitals where the study was conducted. There are 22.00% from the Northwestern region, 16.00% from the Southwestern region, and the smallest relative share - 10.00% from the South Central region.**
9. **34.00% of the surveyed patients regularly measure arterial blood pressure, and 66.00% of them resort to its measurement only when they get any complaints - severe headache, palpitations or shortness of breath.**
10. **Distribution of patients with arterial hypertension - about 2/3 of the surveyed patients were diagnosed with arterial hypertension. Only in 1/3 of them arterial hypertension was not detected. Deviations of arterial blood pressure from the norm are common.**
11. **28.00% of them have an accompanying disease and are diagnosed with diabetes mellitus, and 32.00% have a proven hypertensive disease. 40.00% reported other comorbidities.**
12. **Distribution of patients according to the month in which they had a heart attack - with the largest relative share are patients who had an**

attack in the month of January - 42.00%, followed by those - in December - 35.00%, on the third place is the month of February - 13.00% and the fourth place is the month of November -10.00%.

13. **Diet of patients with Cardiovascular diseases - 52.00% of patients eat only twice a day, three times a day - 28.00%. 11.00% eat once a day, 9.00% four times a day. The number of meals is essential for patients with cardiovascular diseases, as well as the quantity and quality of food taken.**
14. **The preferred culinary processing of food is mainly frying - 51.00%. Patients who use boiling and baking are 32.00%, mainly baking - 16.00%, and by boiling 11.00%. For patients with cardiovascular diseases, frying food is prohibited by the diet they must follow.**
15. **65.00% of the respondents are overweight, 28.00% have a normal body weight, and 7.00% are underweight. Being overweight increases the risk of developing serious cardiovascular diseases.**
16. **Smoking in patients with Cardiovascular diseases - 58.00% that they are smokers. Non-smokers are only 42.00 %.**
17. **Conditions for the occurrence of heart pain - the largest relative share of patients in whom it occurs suddenly - at night - 38.00%. After a stressful situation and mental strain, 32.00% of the respondents got angina pain, after physical strain – 21.00%. Only in 9.00% the pain occurs after eating.**
18. **Availability of regulated and clear indicators for monitoring the general condition of patients with Cardiovascular diseases - according to the largest part of the health care specialists surveyed – 60.00%, there are regulated and clear indicators for monitoring the general condition of patients. 30.00% indicate that only partly these indicators are precisely and clearly regulated, and according to 10.00% they do not exist.**

19. **Need for additional qualification - 37.00% definitely need additional training for working with these patients due to the specifics of their general health condition. 35.00% - partly, and 28.00% gave a negative answer to this question.**
20. **Readiness and skills of nurses to work with innovative technologies in patients with Cardiovascular diseases - 35.00% of respondents believe that they are fully prepared to work with innovative technologies in patients with Cardiovascular diseases . about 1/3 of nurses in hospital structures experience difficulties in working with innovative technologies. It is definitely necessary to introduce staff training with information systems in the field of health care to process patient information.**
21. **Ways to store and use information related to nursing care for patients with Cardiovascular diseases - 54.00% of respondents use various specialized computer programs. 46.00% enter the information manually and thus spend a significant amount of time writing by hand.**
22. **Need to introduce an informational approach to nursing care for patients with cardiovascular diseases - 78.00% support the need to introduce an informational approach, 22.00% cannot judge.**

Dissertation contributions

Contributions of a scientific and theoretical nature:

1. The scientific literature was analyzed regarding: prevention, the main prerequisites and principles for the promotion and prevention of cardiovascular diseases;

2. Scientific literature on the main characteristics of social factors of health (types of social factors of health and healthy style and lifestyle) has been collected and systematized;

3. The scientific literature on the issue of conceptual and organizational models for health care was analyzed;

4. The socio-medical problems and the social significance (epidemiology and prevention) of Cardiovascular diseases are analyzed;

5. The main risk factors for cardiovascular diseases have been identified and analyzed;

6. The scientific literature on the main forms of Ischemic Heart Disease (Stable and Unstable Angina, Acute Coronary Syndrome, Myocardial Infarction, Atherosclerosis and rhythm disturbances of heart activity) has been collected and systematized.

7. The leading care needs of patients with Cardiovascular diseases have been determined.

Contributions of a scientific and applied nature:

1. An approach has been developed for promotional and preventive health care for patients with Cardiovascular diseases and a mechanism for efficient organization of hospital admission and patient care.

2. The proposed approach contributes to the improvement of the existing organization and analysis, control and evaluation of health care for patients with Cardiovascular diseases.

3. The approach to promotional and preventive health care for patients with Cardiovascular diseases indicates the mechanisms for the implementation of nurses in outpatient care and the organization of independent practice.

4. The stages regarding monitoring the general condition and measuring indicators are described; diagnostic studies and therapeutic procedures related to intensive care, invasive angiographic procedures, operative interventions (preoperative and postoperative preparation), therapeutic care, prevention of complications.

5. The organization of health care according to the developed approach allows in practice the development of an individual care plan based on the individual needs of patients with cardiovascular diseases;

6. The developed approach needs to be used as the basis of the hospital's informational and documentary provision of promotional and preventive health care for patients with cardiovascular diseases.

Publications in connection with the dissertation work

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2. Василева В., **Д. Иванова**. Роля на медицинските сестри в обучението на диализни пациенти, очакващи бъбречна трансплантация. Сестринско дело, 54, 2022, № 3, 59-65. ISSN 1310-7496
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