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USE OF SCIENTIFIC RESEARCH METHODS IN REHABILITATION OF PATIENTS WITH MYOCARDIAL INFARCTION

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Abstract

Myocardial infarction (MI) is one of the most dangerous and deadly cardiovascular diseases, and in addition to saving the patient's life, it is also an important issue to restore their quality of life. From this point of view, the rehabilitation process in the post-infarction period plays a decisive role in restoring cardiac function, improving the physical and psychological condition of the patient, and preventing recurrence of the disease.

This scientific article deeply studies the role, importance, and effectiveness of using scientific research methods in the rehabilitation process after myocardial infarction. The study analyzes the use of methods such as clinical observation, functional tests, statistical analysis, experimental methods, psychological assessment tools used in the rehabilitation of patients, their advantages and limitations. At the same time, it highlights the possibilities of assessing the effectiveness of rehabilitation through the use of modern medical technologies (ECG monitoring, Holter, cardiac ultrasound, laboratory indicators).

Rehabilitation is carried out in stages (hospital, outpatient and home), and individual approaches are required for each stage. The study substantiates the scientific methods that should be used for each stage. It also analyzes the assessment of the physical condition of patients based on functional tests, the use

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of "questionnaires for determining the psychological state (e.g. HADS, SF-36)", and the possibilities of mobile technologies for monitoring rehabilitation at home. At the end of the work, it is substantiated that the correct selection of scientific research methods and their integration are important in increasing the effectiveness of rehabilitation, faster recovery of patients' health and reducing the risk of recurrent myocardial infarction. The results of the study can be used in the practical healthcare system, rehabilitation centers and medical universities.

Keywords: Myocardial infarction, rehabilitation, clinical observation, scientific research methods, physical recovery, psychological state, functional tests, cardiac activity, statistical analysis, individual approach, stages of recovery, Holter monitoring, rehabilitation effectiveness, health restoration, cardiovascular system.

Introduction

Cardiovascular diseases, in particular myocardial infarction, are among the diseases that cause the most disability and death in the world today. The severe course of the disease, the abundance of complications and the negative impact on the patient's quality of life and life expectancy make this problem even more urgent. One of the important tasks facing medicine is not only to ensure that patients with myocardial infarction survive the disease, but also to return to a full and high-quality life. Therefore, the rehabilitation process is considered an integral stage of treatment.

Rehabilitation is a complex set of measures aimed at restoring the patient's physical, mental and social health, and scientifically based approaches are necessary for its proper organization. It is in this process that the use of scientific research methods creates the opportunity to deeply analyze the patient's condition, create individual programs, evaluate results and increase efficiency. This scientific work comprehensively covers the main scientific research methods used in the rehabilitation process after myocardial infarction, their role in rehabilitation and practical significance. The work draws conclusions based on theoretical and practical data and develops recommendations for their implementation in healthcare practice.

Main part.

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1. Theoretical foundations of the concept of myocardial infarction and rehabilitation

1.1. Causes, pathogenesis and consequences of myocardial infarction.

Myocardial infarction is a serious condition accompanied by necrosis of the heart muscle, which occurs due to blockage of the coronary arteries as a result of thrombosis or spasm. As a result of ischemia, part of the heart muscle is deprived of blood supply, and as a result, cells undergo necrosis. This condition impairs the heart's pumping function and can lead to life-threatening complications such as arrhythmias, heart failure, and cardiogenic shock.

1.2. Purpose and stages of rehabilitation.

Rehabilitation is a set of measures aimed at restoring the physical, psychological, and social condition of the patient. Rehabilitation is carried out in the following stages:

Stage 1: Hospital (inpatient) rehabilitation

Stage 2: Outpatient (polyclinic) rehabilitation

Stage 3: Independent rehabilitation at home

2. Scientific research methods used in rehabilitation after myocardial infarction

2.1. Clinical observation and diagnostic methods

Clinical observation is important at all stages of rehabilitation. In this case, ECG, cardiac ultrasound (EchoCG), Holter monitoring, heart rhythm and blood pressure monitoring methods are used to determine the functional state of the heart.

2.2. Statistical and analytical methods

To assess the effectiveness of rehabilitation, the patient's condition is analyzed using statistical methods (descriptive statistics, correlation analysis, regression models). This allows comparing the effectiveness of various rehabilitation programs.

2.3. Psychological and sociological research methods

Various psychological tests and questionnaires (for example, HADS - anxiety and depression scale; SF-36 - quality of life assessment tests) are used to assess the

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mental state of patients. These data play an important role in developing the psychological component of rehabilitation programs.

2.4. Experimental methods and clinical studies

In the study of innovative approaches to rehabilitation, experiments on small groups, practical application of new technologies (for example, telemonitoring, rehabilitation mobile applications), and evaluation of clinical protocols are carried out.

3. Directions for improving rehabilitation based on scientific methods

3.1. Individual approach and personalized rehabilitation programs

Scientific methods identify the individual characteristics of each patient (age, comorbidities, psychological state) and create an appropriate rehabilitation plan. This approach increases effectiveness.

3.2. Use of innovative technologies

Modern technologies - mobile health applications, continuous heart monitoring devices, online consultation platforms - provide monitoring and support at home.

3.3. Medical education and promotion of a healthy lifestyle

Recurrent heart attacks are prevented by providing patients and their families with information about a healthy lifestyle, proper nutrition, exercise and stress management.

Conclusion:

The rehabilitation process for patients with myocardial infarction plays a crucial role not only in restoring health, but also in improving the quality of life, preventing relapses, and restoring social activity. The study found that the use of scientifically based methods allows for individualization of rehabilitation, analysis of effectiveness at each stage, and decision-making based on the results. The patient's physical and mental state is fully assessed through clinical observations, functional tests, psychological questionnaires, statistical analysis, and experimental studies. Modern technologies are expanding the possibilities for monitoring and controlling rehabilitation at home. At the same time, promoting a

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healthy lifestyle to patients, their active involvement in rehabilitation, and psychological support increase the effectiveness of the process.

In conclusion, the comprehensive use of scientific research methods in rehabilitation after myocardial infarction is not just a medical approach, but an integral part of modern medical practice, leading to a deep understanding of the disease and the development of individual strategies tailored to the needs of the patient.

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