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Application of education with optimization of the internal picture of heart in patients with acute coronary syndrome at the stage of rehabilitation

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Abstract
The aim of the study was to evaluate the effectiveness of the use of interactive training with optimization of the internal picture of health in patients with ACS at the stage of rehabilitation. Clinical-anamnestic, psychometric and quality of life quality study were performed according to the SAQ questionnaire in 141 patients with ST-segment elevation myocardial infarction (STEMI) with different treatments and rehabilitation measures. The course of ACS depends on many factors, in particular the applied method of treatment. Training as an integral part of complex rehabilitation, by optimizing the internal picture of health, contributes to the improvement of the quality of life and the formation of a system of behavioral health rehabilitation in patients. The results of the performed studies indicate the effectiveness of training by optimizing the internal picture of health in patients with acute coronary syndrome.

Keywords: Acute coronary syndrome, rehabilitation, internal picture of health, attitude to the disease

Introduction
The problem of cardiovascular diseases is not only common-medical but also social, since it determines the length and quality of life of the population [1, 2], leads to the disability of the still working part of society [3].
Particular attention deserves the stage of rehabilitation and rehabilitation of patients after suffered acute coronary syndrome [4, 5, 6].
In recent years, rehabilitation programs have undergone a significant improvement. If at the beginning rehabilitation measures included control of blood pressure and level of physical activity, then at the present stage they represent a complex of multidisciplinary measures [5, 6].
One of the important points in the complex approach to cardio-rehabilitation is the active position of the patient himself and the completeness of his participation in the implementation of all components. Patients' education is declared as the basis of the policy in the field of the population's health promotion. Patients who are actively involved in making treatment decisions are more likely to follow doctor's recommendations as for the medical treatment and behavioral changes aimed at improvement of health [7].
The internal picture of health is a subjective reflection of the patient's state of health, which leads to a certain perception and formation of a position regearding the disease itself, the effectiveness of treatment and an active position as for recovery after the disease. The ability to perceive illness as part of health is a strategy of self-preservation and self-healing behavior [8].
The purpose of the study was to evaluate the effectiveness of the use of interactive training with the optimization of the internal picture of health in patients with ST-segment elevation myocardial infarction at the stage of rehabilitation.

Materials and methods of research
There were examined 141 patients with ST-segment elevation myocardial infarction, who were divided into groups: with the use of conservative treatment - 63 patients and with PCI - 78 patients.
In each group of patients, subgroups have been identified, depending on the methods of restorative treatment and rehabilitation. The first group of patients with the use of traditional rehabilitation measures: medical rehabilitation, physical rehabilitation, which included respiratory and therapeutic gymnastics, metered walking. The second group of patients, who along with the traditional rehabilitation measures was applied the program to optimize the

internal picture of health "Program of clinical-psychological rehabilitation of cardiologic patients by optimizing the internal picture of health" (hereinafter the "Program").

Traditional treatment included: a medical component with non-medicated and medicinal effects and a physical component, which was to use respiratory and therapeutic exercises depending on the functional capabilities of the patient, dosed walking according to the appropriate programs.

Influence through interactive training was performed by application of the "Program of clinical-psychological rehabilitation of cardiologic patients by optimizing the internal picture of health", which is compiled on the basis of the author's certificate for a scientific work [9, 10].

The procedure for participation of patients in the program was as follows: all patients in the rehabilitation department were encouraged to participate in the program of psychological rehabilitation. The program was not imposed, but only recommended, therefore the choice was based on the individual's awareness and the patient's necessity. Lessons were performed by a cardiologist and a psychologist.

Collaboration with the patient took place in the following steps:

1. introductory conversation, clarification of the motivation of participation in the program;
2. work in the selected program of optimization of IPH: 5 interactive lessons using elements of training, duration – 60 minutes;
3. individual psychological counseling (60 minutes) upon request of individual studied subjects);
4. post-diagnostic stage of the results of program's impact (occurred after 1 month, 6 months after the program has been finished).

The main work with the participants of each program was carried out in the form of counseling. Group work was performed in the form of interactive classes according to generally accepted principles (here and now, sincerity and openness, activity, confidentiality, etc.), which allowed the participants to strengthen interpersonal relationships, empathise, support, analyze and understand the actual issues regarding rehabilitation, recovery.

Lessons are based taking into account the components of the internal picture of health (IPH), each component was considered in every lesson. Classes were cyclic, groups were open, each patient could join the group in the process of its activity without losing the training logic. During the individual lessons, each patient was determined a component that was significant for a particular patient and needed correction. If necessary, and on request, the patient was performed an individual work.

Patients received standard therapy for patients with coronary heart disease in accordance with the recommendations of the Working Groups of European and Ukrainian partners [10].

Clinical, psychometric peculiarities were evaluated, quality of life was analyzed according to the "Seattle questionnaire of life quality for angina pectoris patients (Seattle Angina Questionnaire - SAQ) and its scales "Physical Limitation" (Physical Limitation - PL), "Stability of Angina Pectoris" (AS), "Frequency of Attacks" (Angina Frequency - AF), «Treatment Satisfaction» (Treatment Satisfaction - TS), «Disease Perception» (Disease Perception - DP). Depending on the answer to the questions, they were determined from 1 to 5 points, followed by a recalculation.

Statistical processing was performed using the software "Microsoft Excel" and "Statistica" v. 10.0 StatSoft, USA. The assessment of the probability of the difference in mean values was performed using the paired t-criterion of Student. Mean values are given as (M±m), where M – is the mean value of the indicator, m – is the standard error of the mean. The results were considered statistically significant at a value of $p<0.05$.

Results of the research and their discussion

Analyzing the clinical-anamnestic data of patients with ST-segment elevation myocardial infarction (STEMI), it was determined that the average age of patients with conservative tactics is 70.6±1.52, and patients who were performed PCI – 61.05±1.38. Distribution of patients according to age and gender, depending on the treatment applied, is represented in Table 1.

Table 1: Distribution of patients with STEMI according to the age and gender

Age	Gender	STEMI (n=141)	
		Conservative (n=60)	PCI (n=75)
under 45years	female	-	-
	male	3 (4.76%)	5 (6,41%)
Total		3 (4.76%)	5 (6.41%)
45-59 years	female	3 (4.76%)	6 (7,69%)
	male	7 (11.11%)	24 (30,77%)
Total		10 (15.87%)	30 (38.46%)
60-74 years	female	14 (22.22%)	10 (12,82%)
	male	15 (23.81%)	22 (28,21%)
Total		29 (46.03%)	32 (41.03%)
75 years and more	female	10 (15.87%)	4 (5,13%)
	male	12 (19.05%)	7 (8,97%)
Total		22 (34.2%)	11 (14.10%)

Notes:
1. The absolute number of patients is indicated.
2. The percentage to the absolute number of studied persons is represented in the brackets.

At the beginning of the observation, in all groups of patients with STEMI, indices of low quality of life were noted according to all SAQ questionnaire scales, besides the scale of satisfaction with treatment (Fig. 1).

After 6 months, the improvement of indices was observed, but these changes were more pronounced in patients who had PCI. Thus, in the group of patients with the use of conservative treatment and traditional treatment according to the scale of physical activity limitation, the indicator after 6 months was 46%, with the application of "Programs" 525,

and in the group of patients with the use of PCI, respectively, 60% and 65% (p< 0.05) (Fig. 2). We have determined the improvement of quality of life according to the scale of the attitude towards the disease in the group using the "Program". In particular, with the use of conservative treatment and traditional treatment at the beginning of treatment, this index was 45%, after 6 months 84%, and in the group of patients with PCI, respectively, 54% and 90% (p<0.05) (Fig. 3).

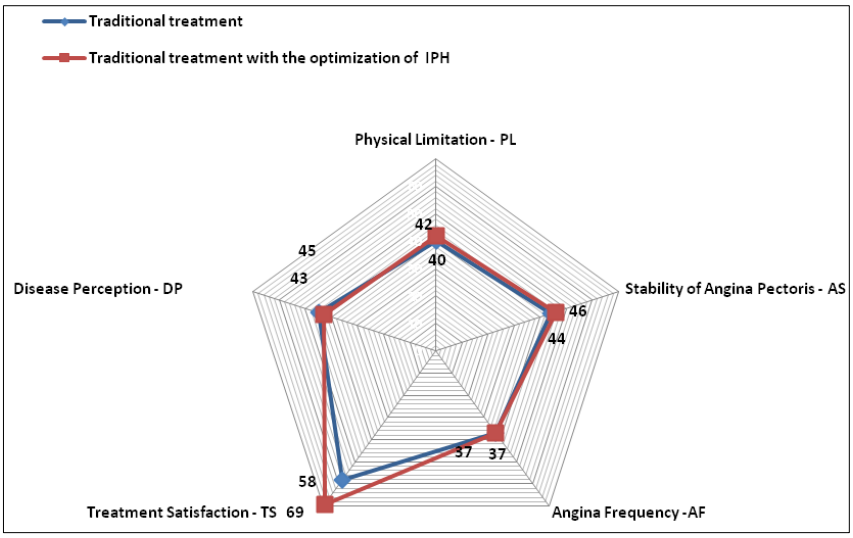

Fig 1: Quality of life of patients with STEMI at the beginning of the treatment

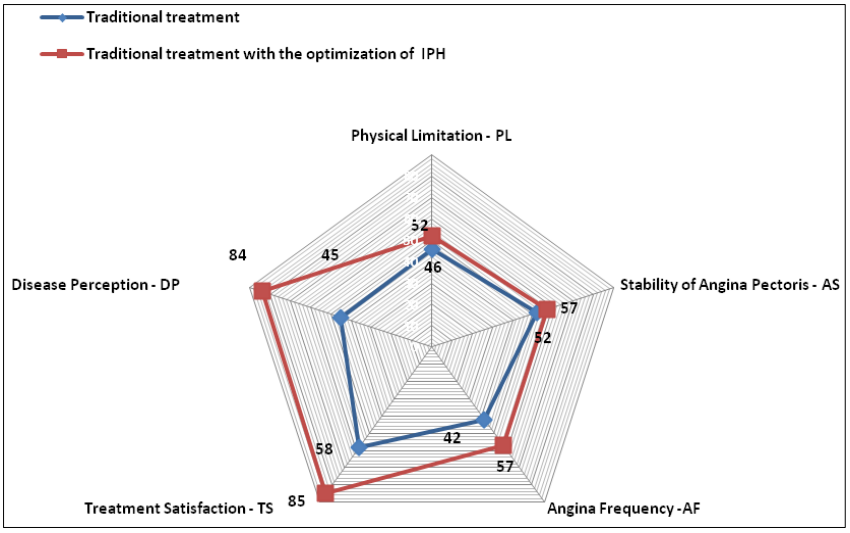

Fig 2: Quality of life of patients with STEMI with conservative treatment tactics after 6 months of treatment

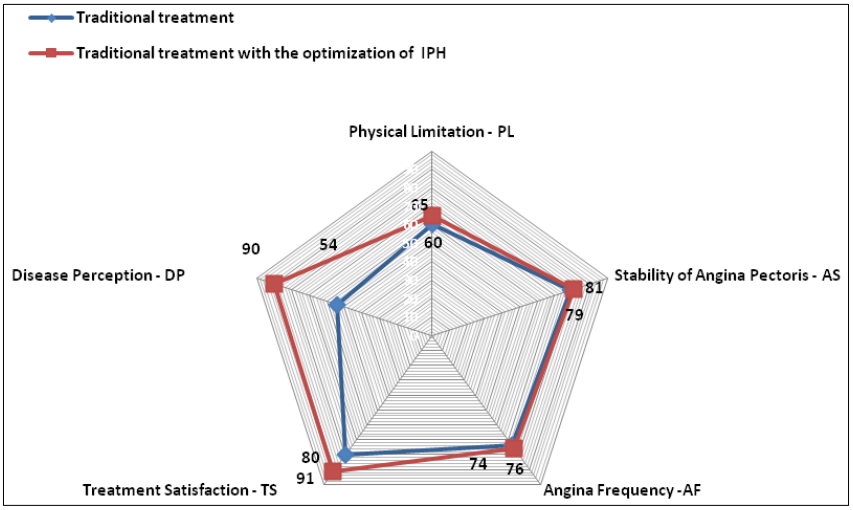

Fig 3: Quality of life of patients with STEMI who were performed PCI after 6 months of treatment

By means of interactive training with the optimization of the IPH due to the correction of intellectual representations, the

formation of health regimes behavior may be formed in patients. Optimization of the IPH with the use of "Program" leads to the taking of the optimal physical capabilities that can be achieved after treatment and rehabilitation, increase of motivation of treatment and healthy lifestyle, improvement of the range of knowledge about ways to support and improve health, increase of vital activity and expansion of the fields of activity, deepening of knowledge about the peculiarities of the disease, development of understanding of the consequences of their own behavior for their health, formation of the installation of the importance of their personality to save health.

Table 2 represents the content of optimization each component of the internal picture of health of the patient.

Table 2: Optimization of components of IPH

Components of IPH	Correction content
Sensitive component	- acceptance and understanding of the meaning of physical comfort or discomfort; - the ability to obtain information about the disease through a symptom; - expanding the abilities to control the body; - formation of the actual and resourcefulness of a person. understanding the dynamics of the disease; - through the sensation of building an understanding of the prospects of recovery and the possibilities of the body in the present; - acceptance of the optimum of physical abilities that can be achieved after treatment and rehabilitation; - pleasure of movement and progress in physiotherapy.
Value-motivational component	- increase in motivation of treatment and healthy lifestyle following; - development of responsibility for his/her health and awareness of his/her own importance for making vital decisions; - improvement of the understanding of his/her own system of values and health; - expansion of life prospects, finding new life goals; - acceptance of the value of movement, support, restoration, increase of physical indicators of an organism
Cognitive component	- improvement of the range of knowledge on the ways to support and improve health; - deepening of knowledge about the peculiarities of the disease; - improvement of self-knowledge, awareness and comprehension of vital decisions influencing health; - expansion of resources, development of ability to allocate successful strategies for improvement of health; - expansion of the scope of knowledge about the content and effectiveness of physical activity in physiotherapy
Emotional component	- development of emotional self-awareness, improvement of the ability to analyze his/her mood; - improvement of self-understanding and self-knowledge; - facilitating the mastering of skills to overcome the destructive effects of emotions on health; - reduction of anxiety level, improvement of well-being; - formation of successful strategies for the development of confidence and optimization of emotional response to his/her health; - development of awareness of positive emotions from movement.
Behavioral component	- focusing on a healthy lifestyle, seeking and understanding the behavior that promotes health; - development of an understanding of the consequences of his/her own behavior for health, formation of a setting about the importance of personality for the preservation of health; - increase of vital activity and expansion of spheres of activity; - awareness of strong qualities, disclosure of internal resources, activity according to new strategies for solving the difficult life situations; - performance of medical appointments, and physiotherapeutic rehabilitation exercises both under the supervision of a specialist and independently.

The results of the studies demonstrate the effectiveness of the use of training with optimization of IPH and the impact of such an intervention on the improvement of life quality, namely the change of an attitude to the disease. In addition, there were found differences depending on the treatment used in patients with STEMI. Thus, in patients with PCI compared with the use of conservative treatment tactics, a more pronounced improvement in the quality of life after 6 months was found according to all SAQ questionnaire scales.

Conclusions

1. The course of ischemic heart disease after acute coronary syndrome depends on the age of the patient, the degree of myocardial ischemia, the extent of coronary atherosclerosis, the used methods of treatment and rehabilitation measures.
2. In the process of treating patients with ACS there is a better quality of life, especially when using PCI.
3. An important component of the complex rehabilitation of patients after STEMI is training that allows influence in general the components of the internal picture of health.

The further study of the effect of IPH optimization on the physical components of rehabilitation of patients after myocardial revascularization.

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