

ABOUT PROVIDING HIGH-TECH CARDIOLOGICAL CARE TO THE RESIDENTS OF REGIONAL TERRITORIES

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ABSTRACT:

One of the most effective medical care types for the population is high-tech medical care (HMC). Measures to improve the high-tech medical care quality will lead to a significant and lasting improvement in the patient's health and life quality. At the same time, until recently, the specialized high-tech medical care provision to the population of the Republic of Uzbekistan was concentrated mainly in Tashkent, which limited access to relevant services for the regions' population.

The specialized assistance providing issues to the remote regions population and their satisfaction with its provision level and quality have not been sufficiently studied. Using questioning method of 366 patients of the cardiology department of Navoi regional multidisciplinary medical center, the patients' opinion about the outpatient and inpatient cardiological care provision quality was analyzed. Most patients rated the work organization and the center medical staff professionalism as good and satisfactory. The patients' main complaints are related to the doctor-patient communication process quality and the meals organization in the hospital center.

Keywords: high-tech medical care, medical care quality, multidisciplinary medical center, healthcare, medical personnel, patients

INTRODUCTION:

In Uzbekistan, the most common death cause, as in many countries, over the years are circulatory system diseases (CSD), which account for more than half of all death (54,7% against 41,7% in 1991) [5,6,13]. Among o the circulatory system diseases the highest percentage is attributed to ischemic heart disease (IHD) and cerebrovascular diseases (CVD) [1,16]. Literature data analysis allows us to conclude, that these diseases prevalence varies from country to country, and even separate country regions [3,12,14,18].

The socio-hygienic problem of CSD is associated with a high prevalence, disability and mortality level in this pathology, a steady increase in these indicators, and a significant rejuvenation of this pathology, against the increasing various risk factors impact background, a high economic costs index for their study, prevention and treatment. WHO experts predict a further increase in the prevalence and mortality from CSD both in developed ones, and developing countries, due to changes in demographic indicators (the population aging), an increase in the number of other non- infectious diseases (NIDs),

correlated with cardiovascular diseases (CVD) and population lifestyle characteristics [6,13,15].

CVD pathogenetic causes are heart and blood vessels disorders. These diseases include ischemic heart disease (IHD), myocardial infarction (MI), cerebrovascular disease (CVD), high blood pressure (BP), hypertension disease (HD), peripheral arterial and venous disease, rheumatic heart disease, congenital heart disease, various types of heart failure, arrhythmias, myocarditis and other pathologies.

Cardiovascular diseases or circulatory system diseases at the beginning of the XX century accounted for no more than a few percent in the population pathology in almost all countries of the world. By the middle of the century, they reached the 10th - 11th place in the diseases ranking, and at the end of the XX century they had already taken leading positions in the morbidity structure.

According to world statistics, more than seventeen million people die from heart and blood vessels diseases every year in the world, which is one third of all death causes. According to the WHO experts forecasts, the world health problem severity associated with a further increase in morbidity and mortality from circulatory system diseases (CSD) will only grow in connection with the population aging, an increase in the number of other non-infectious diseases correlated with this pathology and modern person lifestyle peculiarities (6). In the morbidity structure in the population of the Republic of Uzbekistan, CSDs occupy a rather low ranking position, explained by its low average age residents (1), which in 2020 was 26.3 years. However, in the population mortality structure, the circulatory system diseases occupy a leading position, so in 2020 this pathology share was 59.3% of all other causes. According to the WHO, the standardized mortality rate in Uzbekistan from

IHD is 323.2, and from cerebrovascular lesions are 146.5 per 100,000 populations (4). In addition, as in other countries, in Uzbekistan, the number of people in older age groups most susceptible to CSD and death from them is increasing from year to year. According to statisticians' forecasts, with modern growth indicators in life expectancy and a low overall mortality level in the country, the population over 60 age by 2030 in the age structure of the country's population will reach 30 - 35%, while at the moment it is less than 10% (2). In such a situation, the measures organization to combat non-communicable diseases, including CSD, becomes one of the main directions in the public health protection. This determined the basic radical health care system improvement concept for the period up to 2019 - 2025 approved by the Presidential Decree of the Republic on 07.12.2018 PD №-5590, where one of the most important areas is to increase the medical care organization efficiency, including ensuring the high-tech medical care (HMC) availability at all its provision stages, through the "health care system organization of the regions based on the "cluster" approach, providing for the unification into different-level medical organizations group, complementary and mutually reinforcing each other" (17).

One of the most effective medical care types for the population is high-tech medical care (HMC). Measures to improve the high-tech medical care quality will lead to a significant and lasting improvement in the patient's health and life quality (9). At the same time, until recently, the specialized high-tech medical care provision to the population of the Republic of Uzbekistan was concentrated mainly in Tashkent, which limited access to relevant services for the regions' population.

As a result of the State program on measures for the further development of specialized medical care implementation for the population of the Republic of Uzbekistan

for 2017 - 2021 (10,11), the system for the provision of specialized medical services has undergone some changes. According to this program, the most modern high-tech specialized medical services in specialized areas are provided at the republican level. Modern high-tech specialized medical services, which until recently were provided only at the republican level, have become available at the regional level as well. At the district (city) level, specialized medical services are provided on the specialized departments. With the aim of early detection of many diseases requiring the prompt intervention of the relevant specialists, the question was raised for consultations by narrow specialized specialists of the district (city) and regional levels organizations according to a specially approved schedule at the primary health care organizations level.

The insufficient level of research work carried out by the centers does not allow timely identification of trends and patterns in the non-infectious (cardiovascular, oncological, endocrinological and many other) diseases spread. The advanced, internationally approved prevention methods implementation level and early detection of the most common diseases remains low. The issues of providing specialized assistance to the remote regions population and their satisfaction with its provision quality level have not been sufficiently studied.

According to WHO experts, one of the four qualitative medical care (QMC) provision indicators to the population is patient satisfaction with medical care (7). However, until now, insufficient attention is paid to the QMC satisfaction study provided in institutions of the third - highly qualified and highly specialized link. The patients' opinion is a criterion that reflects the subjective characteristics of any institution activities in the treatment and prophylactic process organization, the sanitary and anti-epidemic

state institution, and social services for patients (8).

THE AIM OF WORK:

on the patients opinions analysis of Navoi multidisciplinary medical center of the Republic of Uzbekistan, to assess highly qualified cardiological care provision quality.

MATERIALS AND METHODS:

We studied the data of the annual reports of Navoi multidisciplinary medical center of the Republic of Uzbekistan for 2017-2020. To analyze the patients opinions about the cardiological care quality, specially developed questionnaires were prepared. In total, 366 patients of the center who were treated in the cardiology department of this center from 2017 to 2020 took part in the study. The participants sample in the anonymous questionnaire was made by a simple random method, during their repeated visit to the center's polyclinic. When questioning children under 14 years old, the child's parents or his legal representatives took part in the questioning. This ensured greater objectivity of the data obtained. The survey data were analyzed using the Microsoft Excel 2010 software package, using a statistical functions library with the arithmetic mean calculation (M), standard deviation (σ), standard error (m), relative values (frequency, specific weight in%), Student's criteria (t) with the error probability calculation ($P < 0,001$). Differences in statistical values were considered significant at a significance level of $P < 0.05$.

RESULTS AND DISCUSSION:

Until recently, throughout the post-Soviet space there was a traditional treatment regimen for patients with CCC diseases: polyclinic - hospital - rehabilitation, emergency medical aid in case of emergency. In recent years, more and more attention has been paid

to modern surgical treatment methods, which, according to a number of authors, justify themselves [9,14]. So, at present, in view of the high-tech medical care use (HMC) for patients with ischemic heart disease and myocardial infarction at different stages, mortality from this disease in many highly developed countries has decreased and ranges from 4 to 10% [18, 19].

High-tech medical care (HMC) – is a type of specialized medical care, including the use of new complex and (or) unique treatment methods, as well as resource-intensive treatment methods with scientifically proven effectiveness, including cell technologies, robotic technology, information technology and genetic engineering methods, developed on the basis of medical science achievements and related branches of science and technology[14].

In Uzbekistan, until recently, the specialized high-tech medical care provision to the population was concentrated, mainly in the capital city Tashkent, which limited access to appropriate services for the regions' population.

As a result of the State program for the further development of specialized medical care implementation to the population of the Republic of Uzbekistan for 2017 - 2021 (10.16) the system for the specialized medical services provision has undergone some changes. According to this program, the most modern high-tech specialized medical services in specialized areas are provided at the republican level. Modern high-tech specialized medical services, which until recently were provided only at the republican level, have become available at the regional level as well. At the district (city) level, specialized medical services are provided on the basis of specialized departments. With the aim of early detection of many diseases requiring the prompt intervention of the relevant specialists,

the question was raised for consultations by narrow specialized specialists of the district (city) and regional levels organizations according to a specially approved schedule at the primary health care organizations level.

Based on the above-mentioned Presidential Resolution of the Republic of Uzbekistan on June 20, 2017 "On measures for the further development of specialized medical care for the population of the Republic of Uzbekistan for 2017-2021" in Navoi regional multidisciplinary medical center since 2018, they began to provide high-tech specialized medical services in specialized areas, including cardiological.

Navoi region is one of the most industrial regions of the Republic of Uzbekistan with a developed mining, metallurgical, chemical and textile industries. The region population in 2021 exceeded one million people. The regional center is Navoi city. Regional healthcare institutions are represented by rural medical centers, rural and urban family polyclinics, central district hospitals, etc., including Navoi regional multidisciplinary medical center (NRMMC), created by the Resolution of the Cabinet of Ministers of the Republic of Uzbekistan №48 on March 18, 2008. The center is funded in equal shares from the state budget and paid medical and non-medical services. Since 2017, a methodological branch of the Republican specialized scientific and practical medical center of cardiology has been created on the basis of the center. In addition, the center has interventional cardiology, cardiac surgery, radiography and radiology departments. In the Interventional cardiology department, angiography, stenting, correction of heart defects, angiographic examinations of other organs and stenting operations are performed.

Today, more than 70 cardiac surgeries have been performed in this center, out of which 11 children (15.8%) were under the age

of 4 years. It should be noted that cardiac surgery was performed using modern high technologies. After the operation, dynamic monitoring of the children health was established. Nowadays, the operated children health state (88.5%) is satisfactory, without complications, 10% have a moderate condition; over the observation years was recorded 1 death case. To analyze satisfaction with the cardiological care quality conducted a survey and 366 patients of the cardiology department of Navoi regional multidisciplinary medical center hospital were selected, registered in the clinic center from 2017 to 2020. Among the respondents, a significant majority were men 255 people - $69.7 \pm 2.4\%$, women, respectively 111 people - $30.3 \pm 2.4\%$ ($P < 0,05$). The average age of all respondents was 55.7 ± 0.9 years, women were significantly younger (52.7 ± 2.6 years) than men (57.0 ± 0.9 years) ($P < 0.05$). According to their social status, the respondents were distributed as follows: the majority were pensioners 52.2 ± 2.6 ; production workers 15.3 ± 1.9 ; employees 9.8 ± 1.6 ; unemployed 7.4 ± 1.4 ; preschoolers 4.6 ± 1.1 ; pupils (pupils and students) 4.1 ± 1.0 ; farmers and managers of different ranks made up $3 \pm 0.9\%$ each. Навоийнского областного многопрофильного медицинского центра

Routing the patient's referral to the NRMHC hospital provides for the mandatory appeal of the patient to the polyclinic at the residence to obtain a warrant for hospitalization for treatment at the expense of the state budget. If there is no order or when using the patient's right free choice of medical institution patients go to an advisory clinic. After consulting the center's specialist doctors and related survey in the clinic diagnostic departments and establishing a clinical diagnosis, as well as in the evidence presence and the patient consent he is given the established form direction for inpatient

treatment in the specialized clinic department on a paid basis. Thus, the polyclinic link is one of the most important stages in obtaining specialized, highly qualified cardiological care. It should be noted that when asked about work organization in the polyclinic that sent you a good assessment, $17.8 \pm 2.0\%$ of the respondents gave good grade, moreover, among men, only $16.1 \pm 2.3\%$ respondents adhered to this opinion, and among women their number was slightly higher than $21.6 \pm 3.9\%$, $70.1 \pm 2.8\%$ of men and $70.3 \pm 3.4\%$ of women rated the polyclinic activity as satisfactory; the polyclinic work was considered unsatisfactory by $11.8 \pm 2.0\%$ of men and $8.1 \pm 3.2\%$ of women ($P > 0.05$). Thus, the general assessment of the polyclinic link activity does not differ in its characteristics among the male and female groups.

Table 1 Distribution of respondents' opinions on the polyclinic doctors professionalism (per 100 surveyed relevant groups)

The polyclinic doctors professionalism (Table 1) was characterized as good by every fifth

Assessment level	Total		Men		Women	
	Абс	%	Абс	%	Абс	%
Good	83	$22,7 \pm 2,0$	53	$20,8 \pm 2,5$	30	$27,0 \pm 4,3$
Satisfactory	266	$72,7 \pm 2,3$	190	$74,5 \pm 2,7$	76	$68,5 \pm 4,4$
Unsatisfactory	17	$4,6 \pm 1,1$	12	$4,7 \pm 1,3$	5	$4,5 \pm 2,0$
Total	366	100	255	85,9	111	100

respondent $22.7 \pm 2.0\%$, the majority respondents considered it satisfactory 72.7 ± 2.3 and only $4.6 \pm 1.1\%$ considered the doctors work as unprofessional ($P < 0.05$). Similarly, opinions were distributed within the respondents groups by gender, between which

there were no fundamental differences. For the most part, 74.5±2.7% of men and 68.5±4.4% of women noted polyclinic doctors' professional qualities as satisfactory (P> 0.05).

An important role in assessing the polyclinic and the hospital joint work quality is played by the consistency in the patients' hospitalization timing from the receiving moment the order to admission day to the hospital. In this case, the waiting times as unsatisfactory as a result of their duration were assessed by 9.4±1.8% of men and 4.5±2.0% of women (P <0.05), in total 7.9±1.4% of respondents were considered excessive waiting times for hospitalization. Most respondents described this indicator as satisfactory (72.4 ± 3.4%), and every fifth patient (19.7±2.1%) noted it as good.

The patient survey results showed that 74.3 ± 2.8% of them were satisfied with the duration, waiting conditions and the staff attitude in the admission department at the hospitalization time, however, 7.9 ± 2.8% rated the assessment as unsatisfactory. At the same time, men turned out to be more demanding, as 9.4 ± 1.8% of them gave a poor rating, while women characterized the admissions department work as poor only in 4.5 ± 1.9% cases (P <0.05).

In assessing the medical personnel professionalism (Table 2) of the cardiology department of Navoi regional multidisciplinary medical center, more than half of the respondents, 55.2 ± 2.6%, rated it as good, and 44.8 ± 2.6%, while in men and women group the good level grade was almost the same. Not a single patient gave an unsatisfactory assessment for doctors' activity. A direct participant in the inpatient treatment process is nursing staff, the communication duration with whom is much higher and more versatile for each patient than communication with a doctor. The nurses professionalism was assessed by the respondents as good in 61.7 ±

2.5%, as satisfactory in 44.8 ± 2.6% and as unsatisfactory in 2.2 ± 0.8% cases (P <0.05).

Table 2. Distribution of respondents' opinions on the doctors professionalism at the NRMMC (per 100 surveyed relevant groups)

Professionalism	Good		Satisfactory			Unsatisfactory			
	Total	Men	Women	Total	Men	Women	Total	Men	Women
Doctors	55,2 ± 2,6	54,5 ± 3,1	56,8 ± 4,7	44,8 ± 2,6	45,5 ± 3,1	43,2 ± 4,7	0,0	0,0	0,0
Nurses	61,7 ± 2,5	62,0 ± 3,0	61,3 ± 4,6	36,1 ± 2,5	36,0 ± 3,0	36,0 ± 4,6	2,2 ± 0,8	2,0 ± 0,8	2,7 ± 1,5

One of the most important treatment process organization elements in any hospital is the diagnostics completeness (Table 3). In general, all respondents regarded the diagnostics quality and completeness at the NRMMC as good in 70.8 ± 2.3% cases, another 25.6 ± 2.3% described it as satisfactory, and only 3.6 ± 1.0% were not satisfied with this service (P <0.05). At the same time, there were no statistically significant differences in men and women opinions.

Another treatment process quality element is the treatment completeness and the essential medicines availability. Most of the respondents, 69.7 ± 2.4%, agreed that the treatment completeness and treatment process provision organization with pharmacological agents deserves a good assessment.

Table 3 Distribution of respondents' opinions about the main treatment process elements in

the NRMMC (per 100 surveyed relevant groups)

Communication elements	Good			Satisfactory			Unsatisfactory		
	Total	Men	Women	Total	Men	Women	Total	Men	Women
Diagnostics completeness in the center	70,8 ± 2,3	69,8 ± 2,9	73,0 ± 4,2	25,6 ± 2,3	25,9 ± 2,7	25,2 ± 4,1	3,6 ± 1,0	4,3 ± 1,3	1,8 ± 1,2
Treatment completeness and drugs availability	69,7 ± 2,4	70,6 ± 2,9	67,6 ± 4,3	25,1 ± 2,3	23,5 ± 2,7	28,8 ± 4,3	5,2 ± 1,1	5,9 ± 1,5	3,6 ± 1,8
Explanations availability	11,5 ± 1,7	11,8 ± 2,0	10,8 ± 2,9	80,1 ± 2,1	79,6 ± 2,5	81,1 ± 3,7	8,4 ± 1,5	8,6 ± 1,8	8,1 ± 2,6
Information materials availability	12,6 ± 1,7	12,5 ± 2,1	12,6 ± 3,1	76,2 ± 2,2	76,1 ± 2,7	76,6 ± 4,0	11,2 ± 1,7	11,4 ± 2,0	10,8 ± 2,9

Every fourth respondent 25.1±2.3% found this element satisfactory and only 5.2±1.1% patients were dissatisfied with the treatment completeness and quality (P <0,05). Wherein, the number of patients dissatisfied with the treatment was more among men 5.9±1.5 than among women 3.6±1.8, however, there were no statistically significant deviations in the compared groups opinion (P <0,05)

In the obtaining informed consent course for high-tech intervention and treatment, it is important to inform the patient about the course, chosen treatment method prospects and dangers, which are discussed during conversations with a doctor and nursing staff, the explanations availability as good was characterized only by every tenth 11.5±1.7 respondents in the study course. In general, 80.1±2.1% was satisfied with the interviews with the medical staff. The communication quality between the patient and the medical staff was unsatisfactory by 8.4 ± 1.5% respondents (P <0,05). It should be noted that

there was no significant difference in men and women opinions on this issue.

The largest number of complaints from patients was caused by the catering process in the hospital: no marks were given well at all, nutrition was considered satisfactory by 56.8±2.6% respondents. At the same time, men were satisfied with nutrition in 54.1±3.1% cases, and women in 63,1±4,6%. 45.9±3.1% of men and 36.9 ± 4.6% of women were not satisfied with the food quality in the hospital.

In general, 92.9 ± 1.3% patients were satisfied with the treatment quality in Navoi regional multidisciplinary medical center, 3.6±0.9% assessed the center's performance as good, and 3.6±0.9% patients were also dissatisfied with the center's work quality. (P <0,05).

CONCLUSION:

Carried out research by questionnaire method opinions of Navoi regional multidisciplinary medical center patients showed that the majority respondents are satisfied with the medical care quality and the stay conditions at the center. In most opinions, the waiting times for hospitalization and the admission department work organization were assessed as satisfactory. Every second patient appreciated the professionalism of the doctors and nurses of the center as good, and every third as satisfactory. The main complaints were expressed by the patients regarding the meals organization in the hospital - not rated well by any patient, moreover, according to patients more attention should be paid by medical personnel to conversations with patients and their relatives.

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