PILOT TESTING OF THE UNIVERSAL QUESTIONNAIRE IN PRIMARY HEALTH CARE SETTINGS

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INTRODUCTION

Urological diseases have a significant impact on the health of society [2,4]. Determining the true prevalence of urological diseases requires an assessment of the so-called latent urological morbidity ("urological iceberg") [3].

To solve this problem, it is more informative to conduct a targeted survey of the population, rather than an analysis of data on their use of medical care. This is due to the fact that the circulation rate depends on many factors, such as the development of infrastructure and medical care, its accessibility, general and medical culture, habits, customs and mentality of the population, which affect its medical activity.

In the light of the implementation of the tasks set by the State Program for Reforming the Health Care System [1], the development of simple and affordable methods of diagnosis and optimal methods of conservative treatment of urological patients and, importantly, their introduction into the primary health care environment, training general practitioners in the ability to recognize persons with urological diseases and identify those who need treatment are in particular demand.

OBJECTIVE

To assess the diagnostic capabilities of the universal questionnaire in detecting the most common urological diseases in primary health care settings.

MATERIALS AND METHODS

Pilot testing of the developed universal questionnaire was carried out in the Almazar District Medical Association.Patients were admitted according to their appeal for examination and treatment in various nosologies. All patients were admitted by general practitioners. A total of 77 patients were examined (mean age 39.6±1.21 years).

Patients were selected based on inclusion and exclusion criteria and willingness to participate in the study.

Inclusion criteria were both sexes aged 1 year and older.

Exclusion criteria are alcohol or drug abuse within the last 6 months (alcoholism, substance abuse).

Patients selected for the study were provided with verbal information about the nature of the study, as well as their right to terminate their participation in the study, at any time, at their own request.

The questionnaire consists of 33 questions to identify symptoms specific to urological diseases (ICD, BMI, and BPH). Answers to each question are scored as "yes/no". The patient has the option to choose one of two answers.

The pilot testing of the universal questionnaire was carried out as follows: patients were interviewed using the traditional method and using the universal questionnaire. The presence or absence of symptoms of urological diseases was clarified, and the results of each of the survey methods were separately compared with the results of objective research methods (ultrasound of the kidneys, bladder and prostate in men, urinalysis performed with test strips).

To determine the reliability and validity of the universal questionnaire in determining the presence of symptoms of urological disease, its degree of sensitivity, specificity and accuracy was assessed. The reliability of the information obtained by filling out the questionnaire was assessed by comparison with the results of objective research methods.

The sensitivity of a test is a percentage of the rate of true positives.

A true positive value (PI) was considered when the patient's answers to the questions of the universal questionnaire and the signs of the disease revealed by objective research methods coincided.

$$\text{Sensitivity} = \frac{UI}{IP + LO} \times 100\%$$

A false-negative value (LO) is the proportion of patients with an affirmative answer to the questions of the universal questionnaire whose answer was negative in an objective study.

The specificity of the test is a percentage of the rate of true negatives.

$$\text{Specificity} = \frac{IO}{IO + LP} \times 100\%$$

A true negative value (OI) was considered to be when the universal questionnaire resulted in a denial of symptoms and objective testing methods excluded the presence of signs of disease.

A false-positive value (LP) is the proportion of patients in whom the questionnaire showed the presence of a symptom of the disease than it is according to the data of an objective study.

The diagnostic accuracy of the test is expressed as the percentage ratio of the true (i.e., corresponding to the condition of the examined patients) results of diagnostic methods to the total number of results obtained.

$$\text{Accuracy} = \frac{IE + IO}{IP + LP + LO + IO} \times 100\%$$

RESULTS AND DISCUSSION

At the first stage of the study, using the traditional survey method, it was found that out of 77 patients, 30 (39.0%) noted the presence of urological disease, 47 (61.0%) denied it.

At the second stage of the examination, a developed universal questionnaire was used in the same patients. As a result, it was found that out of 77 patients, 64 (83.1%) noted the presence of symptoms of urological diseases, 13 (16.9%) denied (Fig. 1).
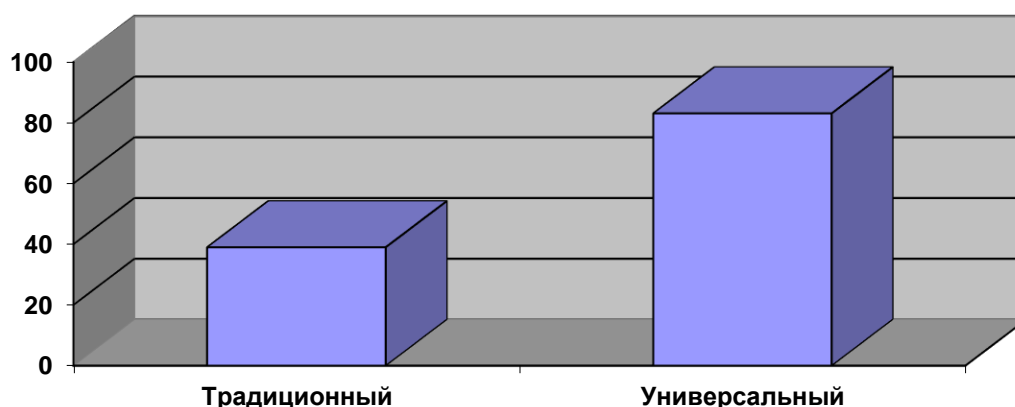
Rice. 1. Results of a survey of patients conducted in the conditions of the Almazar RMS.

In order to compare the results of the survey, both traditional and using a universal questionnaire, patients and signs of disease identified by objective research methods, the data obtained from both studies were divided into two categories: affirmative and negative.

The results of the survey (traditional or using a universal questionnaire): those who had various complaints specific to urological diseases, issued by a computer program developed by us, as a symptom of a urological disease, were indicated by an affirmative answer; the absence of a complaint characteristic of a urological disease was indicated by a negative answer.

The results of objective research methods (objective examination of the patient, ultrasound, urinalysis data performed with the help of test strips), when generally accepted signs of urological disease were detected, were indicated by an affirmative answer. In those cases when no obvious signs of urological disease were found during the objective examination, the results were marked as a negative answer .

The results of the traditional patient survey in comparison with the data of objective research methods are presented in Table 1.

Of the 30 cases in which a symptom of the disease was detected by the traditional survey, 21 cases were confirmed by objective research methods, and in 9 cases the urological disease was not detected, i.e. the results of the traditional survey in 9 cases turned out to be incorrect.

Table 1. Comparison of the results of the traditional patient survey and objective research methods conducted at the Almazar RMO (n=77).

Number of symptomatic responses identified by the traditional survey method		Number of signs of the disease detected by objective methods of examination	
		Affirmative (n)	Negative (n)
Affirmative (n)	30	21	9
Negative (n)	47	33	14
Altogether	77	54	23

Of the 47 cases in which the traditional survey did not reveal symptoms of urological disease, in 14 cases the absence of the disease was confirmed by objective research methods, but in 33

cases the results of the traditional survey were false negatives, i.e. in 33 cases the traditional survey could not detect the presence of a urological disease.

The following test values were obtained in a traditional survey:

Sensitivity – 38.9%

Specificity – 60.9%

Accuracy – 45.5%

The results of the survey using the universal questionnaire in comparison with the data of objective research methods are presented in Table 2.

Table 2. Comparison of the results of the survey using a universal questionnaire and objective research methods conducted in the Almazar RMO (n=77).

Number of symptomatic responses identified by the Universal Questionnaire		Number of signs of the disease detected by objective methods of examination	
		Affirmative (n)	Negative (n)
Affirmative (n)	64	51	13
Negative (n)	13	3	10
Altogether	77	54	23

Of the 64 cases in which symptoms of the disease were detected by the universal questionnaire, 51 cases were confirmed by objective research methods, and in 13 cases no urological disease was detected, i.e. the results of the survey using the universal questionnaire were incorrect in 13 cases.

Of the 13 cases in which the Universal Questionnaire did not detect symptoms of urological disease, in 10 cases the absence of the disease was confirmed by objective research methods, but in 3 cases the results of the survey were false negatives, i.e. in 3 cases the survey using the Universal Questionnaire failed to detect the presence of urological disease.

The following test values were obtained when surveyed using a universal questionnaire:

Sensitivity – 94.4%

Specificity – 56.5%

Accuracy – 79.2%

Table 3. Comparison of the informative value of various survey methods based on the results of the study conducted in the Almazar RMO

Indicators of the degree of reliability of the diagnostic method	Methods of interviewing patients to identify a symptom of the disease	
	Traditional Survey Method	Universal Questionnaire Survey
Sensitivity	38,9%	94,4%
Specificity	60,9%	56,5%
Accuracy	45,5%	79,2%

A comparative analysis of the results of various survey methods conducted in the Almazar RMS to determine the diagnostic efficiency of the studied survey methods showed that the universal questionnaire is more sensitive and effective than the traditional survey method in diagnosing the most common urological diseases (ICD, BMI and BPH) (Table 3).

FINDINGS

The results of the pilot testing of the universal questionnaire conducted in the Almazar RMO showed that the developed universal questionnaire makes it possible to identify patients with urological problems who have applied to district medical associations for examination and treatment in various nosologies.

A comparative analysis of the diagnostic capabilities of the universal questionnaire and the traditional survey showed that the universal questionnaire has higher sensitivity and diagnostic accuracy, and the use of this questionnaire has made it possible to carry out a more effective diagnosis of urological diseases.

Thus, the inclusion of the developed questionnaire in the complex of diagnostic studies increases the efficiency and objectivity of the diagnosis of the most common urological diseases in primary health care.

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