Original Article

Assessment of Satisfaction with Drug Provision of Antihypertensive Drugs at the Outpatient Level of Privileged Categories of Residens

Abstarct

Background: The existing system of outpatient drug provision of citizens allows providing certain categories of citizens and patients with certain types of diseases on a free basis. The purpose of the study is to analysis and evaluate the system of providing preferential categories of citizens with antihypertensive drugs at the level of primary health care. **Materials and Methods:** To determine the level of satisfaction of citizens with drug provision at the outpatient level, 3118 respondents were interviewed using a questionnaire for persons who received free medicines for the treatment of hypertension. The questionnaire consisted of 20 questions. They were distributed by sex and age criterion. The ratio of male and female respondents was 51.7% and 48.7%, respectively. **Results:** Thus, the results of a sociological study to study the opinions of the population about the existing system of free outpatient care revealed some organizational and managerial problems. Although that patients with hypertension since 2012 receive drugs for free, 37% noted that they bought at full cost in pharmacies, which should be released free of charge for privileged categories of citizens. Also, 77% of respondents claimed that they were not invited to outpatient organizations to receive drugs. **Conclusions:** In solving the problems of improving the organization and management, it is necessary to take into account regional peculiarities, which allow, based on the use of a set of methods of analysis and forecasting, to assess the state and trends of development, to identify its strengths and weaknesses, to assess the factors of the external and internal environment.

Keywords: *Antihypertensive drugs, preferential categories of residents, satisfaction assessment, sociological study*

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Introduction

According to the World Health Organization (WHO) assessment, the possibility of ensuring a minimum level of accessibility of medical and pharmaceutical care to the population can be realized through its financing at the level of 8–10% of gross domestic product. The Republic of Kazakhstan in the European database ranks in the middle of the list with an indicator of 1858.8 new cases per 100 000, that is, in absolute numbers in Kazakhstan, about 30,000 patients with arterial hypertension are detected annually.[1-4]

The prevalence (prevalence) of hypertension among adults in Kazakhstan according to official statistics varies from 15.2 to 27.0%, depending on the region, and there is almost the same level of prevalence of hypertension in urban and rural areas, which is comparable with international data.[2,p.1432;21,p.45] In recent years, there has been a steady increase in the incidence (incidence) of hypertension in Kazakhstan. Thus, according to the Statistical Agency of the Republic of Kazakhstan (RK) in 2011 there were 1013.9 cases of hypertension per 100 thousand population, while in 2010 this figure was 913.8 cases per 100 thousand population.[5-13]

The prognosis of hypertension depends largely on the timeliness of the beginning of treatment and its continuity, which, in turn, is closely related to the ability of patients to take prescribed drugs. In the post-Soviet space, the problem of discrepancy between the actual and prescribed treatment in outpatient patients is quite common and is often due to the high cost of drugs and economic problems that do not allow patients to regularly purchase and take the necessary drugs.[11,14,15]

The satisfaction of the population, doctors and pharmacists with the provision of

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preferential categories of citizens with antihypertensive drugs in Almaty was studied.[16] It is interesting to note that in contrast to the results of studies in the Russian Federation,[10,17,18] the majority of respondents assess the work of the existing system of free and preferential drug provision in Kazakhstan as at least "good", and every fifth doctor and every fifth pharmacist assesses it "excellent".[19,20]

The levels of pharmaceutical aid financing in Kazakhstan are still lower than in most countries of the European region and some countries of the Commonwealth of Independent States (CIS). Thus, according to the level of the average consumption of medicines per capita, Kazakhstan (52.0 USD) ranks fourth in the CIS, behind Russia (109.9 USD), Belarus (66.6 USD), and Azerbaijan (61.7 USD), and for the latter there was the fastest relative growth of this indicator – from 38.0 USD in 2010 to 61.7 USD in 2012. In Moldova and Ukraine, the average consumption of medicines per person in 2012 amounted to 48.0 USD and 46.0 USD, respectively, and Ukraine is the only country in the former Soviet Union where there is a decrease in this indicator. In Central Asia, the level of consumption of medicines is much lower and amounted in 2012 to 13.8 USD in Uzbekistan, 13.2 USD in Tajikistan, 11.6 USD in Turkmenistan, and 10.8 USD in Kyrgyzstan. The cost of medicines that are financed by the state in Kazakhstan and the Russian Federation is 35% compared to 30% in Moldova, 25% in Belarus, 22% in Ukraine, and 18% in Uzbekistan, which indicates a fairly low level of economic accessibility of drugs for the population, in particular for privileged groups.[21,22]

Thus, it should be noted the positive aspects of the existing health care system in Kazakhstan, implementing a set of targets to provide citizens with guaranteed, safe, high-quality, and cost-effective assistance in outpatient drug provision.[23-25] In addressing these issues to improve the organization and management must consider the regional characteristics, allowing based on application of complex methods of analysis and forecasting to assess the state and trends of the control object, to identify the strengths and weaknesses of its parties to assess the factors external and internal environment. This will help to determine the positive and negative factors influencing the LAW in the Republic.

The existing system of outpatient drug provision of citizens allows providing certain categories of citizens and patients with certain types of diseases on a free basis.

Purpose of Research

Analysis and evaluation of the system of providing preferential categories of citizens with antihypertensive drugs at the level of primary health care.

Materials and Methods

In order to determine the level of satisfaction of citizens with drug provision at the outpatient level, 3118 respondents were interviewed using a questionnaire for persons who received free medicines for the treatment of hypertension. The object of the study is Almaty (Kazakhstan), as a large metropolis of the country with a developed network of outpatient organizations. We also conducted our own research regarding the study of the state of Drug provision of preferential categories of citizens with antihypertensive drugs.

The study materials were four types of specially designed questionnaires:
- Questionnaire for a doctor who prescribes prescriptions to persons who are eligible for free/preferential Drug coverage;
- Questionnaire for a pharmacist who serves persons who are entitled to free/preferential Drug provision;
- Questionnaire for persons receiving free medicines for the treatment of arterial hypertension;
- A questionnaire for conducting an expert assessment.

In 2014, a sociological study was conducted among doctors of primary health care organizations in Almaty. The number of people who write prescriptions and are eligible for free/preferential Drug provision was 624. The questionnaire consisted of 20 questions. They were distributed according to gender and age criteria.

At the same time, the objects of the study were the population of Almaty (3118), doctors (152), and pharmacists (56), experts (26), drug supply; statistical data from existing information systems; organizations Primary health care (PHC) (City Polyclinic №4, 6, 7, 10, 15, 16, 18) and the City Clinical Hospital No. 1, the City Cardiology Center, the City Rheumatology Center of Almaty.

To determine the volume of purchases of specific medicines, to identify vital and important among them, ABC and VEN analyses were conducted.

ABC-analysis is one of the variants of mathematical and statistical methods of analysis that groups an existing population according to certain criteria (medicines, customers, countries, suppliers, etc.). It is a tool for determining the part of certain groups in the population. It is used to classify aggregates according to the selected criterion into three groups: A, B, and C. As a rule, two criteria are used. In our case, the ABC analysis is understood as the distribution of drugs into three groups in accordance with the annual consumption. The used medicines are distributed in order of decreasing the cost of purchases, and the specific weight of the cost of purchasing each drug is calculated. At the same time, for example, class A includes 10–20% of drugs, for which 70–80% of money is spent, class B— 20–30% and 5–10%, respectively, class C— 50–70% and 10–15%.

In parallel with the ABC analysis, a VEN analysis is performed, which is based on the same principles as the ABC analysis. It allows you to set priorities for the selection and purchase of medicines in accordance with their classification into vital (Vital — V), necessary (Essential — E) and secondary (Non-essential — N).

As can be seen from Table 1, the ratio of male and female respondents was 51.7% and 48.3%, respectively. However, the differences between the groups were significant (p < 0.05) in the category of women aged 60–69 years and high reliability of differences (P < 0.001) was observed in the category of 70 years and older.

It is also determined that the majority of the respondents 73.3% were of retirement age and 16.2% - working [Table 2].

Also, an expert assessment was carried out and the staff of the Department of clinical pharmacology of the Kazakh National medical University acted as experts. S. D. Asfendiyarova and cardiologists, anesthesiologists of the City Cardiology Center of Almaty. The number of experts was 26. According to the appeal in the health organization, the majority of respondents are defined.

Following from 64.5% of respondents indicated a monthly visit to medical organizations, 24% – at least 1 time a year, and the remaining 11% – if necessary. Then determined the number of patients held at the dispensary account.

Then the number of patients registered at the dispensary was determined [Figure 1 and Table 1].

The number of patients among the respondents who are on the dispensary account for hypertension was 43% who were registered for 8 years or more, 26% - 5–7 years and 31% - 1–3 years. Patients were also identified depending on the stage of hypertension. Patients were also identified depending on the stage of arterial hypertension [Figure 2].

The number of patients with stage I hypertension was 15 (7.5%), II – 77 (38.5%), III – 86 (43%), and IV – 22 (11%). All respondents received free drugs for the treatment of hypertension, including 44% for 1–3 years, 34.5% for 5–7 years, and 8 or more patients – 21.5% [Figure 3].

The drugs that the patients received are presented below[Figure 4].

On the basis of Figure 4, showing the name of drugs, such as bisoprolol, carvedilol, enalapril, lisinopril, amlodipine, nifedipine, losartan, indapamide, fosinopril, metoprolol, and others. The effectiveness of treatment of hypertension was in the performance of all doctor's appointments [Table 3].
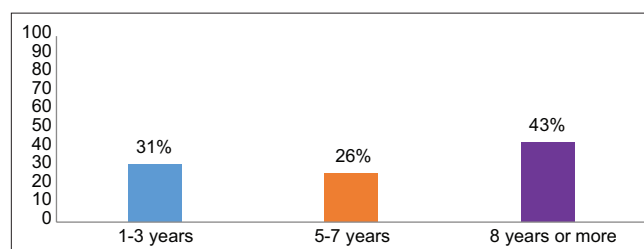

Figure 1: Number of patients registered at the dispensary (%)

Table 1: Sex and age distribution of the studied persons

Age (years)	Paul					
	Men		Women		Total	
	absol. number	% to the "total	absol. number	absol. Number	% to the "total	absol. Number
Up to 29 years	0	0	0	0	0	0
30-39 years	0	0	0	0	0	0
40-49 years	94	5.8±0.6	110	7.3±0.7	204	6.5±0.4
50-59 years	383	23.8±1.1	465	30.9±1.2	848	27.2±0.8
60-69 years	391	24.3±1.1	423	28.1±1.2*	814	26.1±0.8
70 and older	743	46.1±1.2	509	33.8±1.2***	1252	40.2±0.9
Total	1611	100.0±0.0	1507	100.0±0.0	3118	100.0±0.0

*$P<0.05$ - differences between groups are significant; **$P<0.001$-between groups a high degree of confidence

Table 2: Distribution of respondents by type of activity

Occupation	Gender of respondents					
	Men		Women		Total	
	absol. number	% to the "total	absol. number	absol. Number	% to the "total	absol. Number
In retirement	1169	72.6±1.1	1116	74.1±1.1	2285	73.3±0.8
Not work	156	9.7±0.7	172	11.4±0.8	328	10.5±0.5
Work	286	17.8±1.0	219	14.5±0.9	505	16.2±0.7**
Study	0	0	0	0	0	0
Total	1611	100.0±0.0	1507	100.0±0.0	3118	100.0±0.0

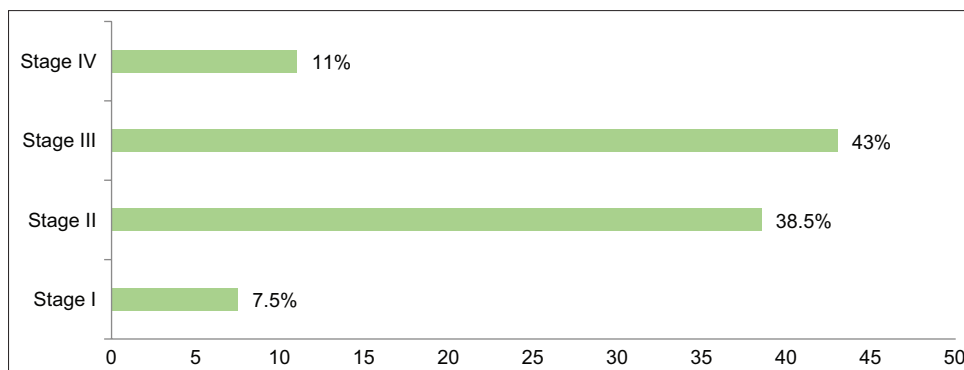**$P<0.01$ - differences between groups are highly significant

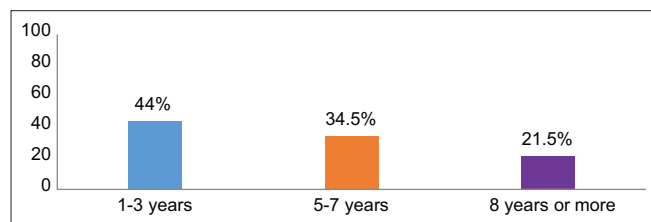**Figure 2: Number of patients by stages of arterial hypertension (%)**

Figure 3: Number of patients who received medicines for free (%)

Table 3: Frequency of taking medicines by patients with hypertension as prescribed by a doctor

The name of the frequency of taking drugs	Percentage
Always	82
Sometimes	11,5
Very rarely	6,5
Never take	0
Total	100

As can be seen from the Table 3, 82% of respondents always took medication prescribed by a doctor, in 11.5% cases-sometimes, 6.5% – very rarely. Of those who did not always follow a doctor's appointment – 3.5% did not trust the attending physician, and 4% believed that the treatment was ineffective.

Also, the results of the sociological study showed that more than half (50.5%) of respondents visited a doctor monthly for drugs, 24% - 1 time in 2–3 months [Figure 5].

At the same time 55% of respondents are satisfied with the qualification of the district doctor, 24% - are not satisfied and 21% - find it difficult to answer. To obtain drugs in outpatient organizations, 55.5% of patients spend up to 1 hour of their time, 29% of respondents – 2–3 hrs and the remaining 15.5% - more than 3 hrs. During the study it was revealed that in 38% of cases in the clinic there were no drugs for various reasons. And, it is also necessary to pay attention to the fact that whether patients are invited to receive drugs in the health organization.

Thus, the results of a sociological study to study the opinions of the population in relation to the existing system of free outpatient CARE revealed a number of organizational and managerial problems. Despite the fact that patients with hypertension since 2012 receive drugs for free, 37% noted that they bought at full cost in pharmacies, which should be released free of charge for privileged categories of citizens. Also, 77% of respondents claimed that they were not invited to outpatient organizations to receive drugs.

Therefore, according to the above in 31% of cases, doctors offered patients to buy drugs not included in the list of free

software. In General, the procedure for obtaining drugs only 41% of patients rated as-good, 30% - satisfactory and 22% - unsatisfactory, which requires improvement of the process of prescribing drugs at the level of outpatient organizations.

Discussion

Thus, it should be noted the useful side of the existing health care system, which implements a set of target tasks to provide citizens with guaranteed, safe, high-quality, and cost-effective outpatient medical care. In solving the problems of improving the organization and management, it is necessary to take into account regional peculiarities, which allow, based on the use of a set of methods of analysis and forecasting, to assess the state and trends of development, to identify its strengths and weaknesses, to assess the factors of the external and internal environment. This will help to determine the positive and negative factors affecting the drug supply in the republic.

The existing system of outpatient drug provision for citizens will allow providing certain categories of citizens and patients with certain types of diseases on a free basis. The sociological study further revealed that 91% of the population visit public medical organizations, while only 9% of respondents choose private medical organizations. To determine the number of referrals to health organizations, the majority of respondents (64.5%) visited medical organizations monthly, 24% - at least once a year, and the remaining 11% - when necessary. Further, we determined the number of patients among the respondents who are on the dispensary register for arterial hypertension. 86 patients, i.e., 43% were registered for 8 years or more,
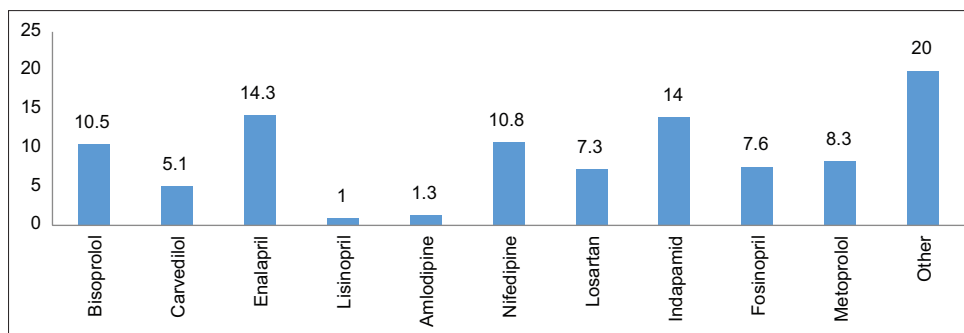
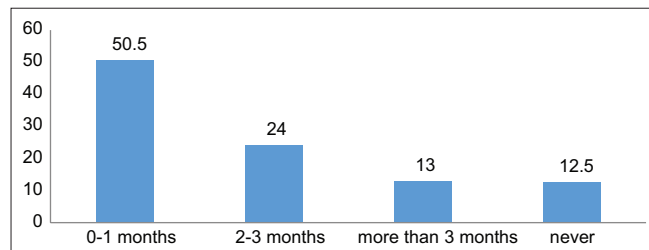**Figure 4: The drugs that the patients received are presented below**

Figure 5: Indicator visit to the doctor for medicines (%)

26% - 5–7 years and 31% - 1–3 years. The number of patients with stage I arterial hypertension was 15 (7.5%), stage II – 77 (38.5%), stage III – 86 (43%), and stage IV – 22 (11%). All respondents received free medicines for the treatment of arterial hypertension, including 44% for 1–3 years, 21.5% for 5–7 years, and 21.5% for 8 years or more. It was found that 164 (82%) of the 200 respondents always took medications prescribed by a doctor, in 11.5% of cases – sometimes, 6.5% - very rarely. Of those who did not always follow the doctor's prescriptions, 3.5% did not trust the attending physician, and 4% believed that the treatment was ineffective.

Conclusions

The results of the sociological study showed a number of organizational and managerial problems in the existing system of free outpatient drug provision. In solving the problems of improving the organization and management, it is necessary to take into account regional peculiarities, which allow, based on the use of a set of methods of analysis and forecasting, to assess the state and trends of development, to identify its strengths and weaknesses, to assess the factors of the external and internal environment.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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