

ROLE OF OPHTHALMIC CARE IN MEDICAL ORGANIZATIONS OF DIFFERENT LEVELS AND MANAGEMENT FRAMEWORK

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ABSTRACT

The article examines the scientific research on the problems related to the state management of organizing the delivery of ophthalmologic care to the population of Kazakhstan. It has been proved that management must participate more actively in the development of ophthalmic care services so as to differentiate the approaches in delivering high-quality ophthalmic care services to the population at the regional level between state and private medicine sectors in conditions of the health system reform.

The purpose of this article is to find the ways to solve the problem of providing population with aid in ophthalmopathies and to choose optimal algorithms of actions taken by primary care and hospital-based physicians to help at the first stage of vision loss.

A sociological survey, as well as a prospective analysis in the form of a literature review to identify the optimal solution to this problem have been selected as the article research methods. Both hospital-based and primary health care physicians from both public, and private medical organizations served as the research study subjects.

The results have shown that in this problem, i.e., in the role of providing population with ophthalmologic care at different levels of medical aid, the first place for primary care belongs to satisfaction with salaries. So, our study has demonstrated that there are about 74% satisfied doctors in both private medical institutions, and public hospitals, and more than 86% doctors, contented with salary increments.

Thus, it can be inferred that enhancement of ophthalmic care services at the local level, first and foremost, requires that qualifications be improved, and salaries be raised of not only primary care doctors, but also hospital-based physicians.

Keywords: State Management, Scientific Research, Organization of Ophthalmologic Care, Population, Improvement of State Management Frameworks

INTRODUCTION

Ophthalmology is one of the most top-requested special-purpose medical services for various aged population, including children. Although numerous studies have shown the potential of telemedicine for providing ophthalmic services, the extent, to which it suits persons of various ages, is not clear.

Today, as far as the role of ophthalmologic care in public health service is concerned, there are some problems in organizing assistance to the population. Many international works show the main role of the family doctor in this service (Tellier, 2015).

The number of ophthalmopathies by to age-related criteria tends to grow, but this problem of global health can be prevented. Eye disease or visual impairment, as a category of

worldwide disease, significantly increases the number of disabled persons of working age. However, there have been no studies of global and regional trends in the incidence of visual impairment. We have estimated the incidence of visual impairments or eye diseases and their worldwide variations over the past 20 years (Fatehia et al., (n.d); Stevens et al., 2013). According to WHO statistics, 285 million people in the world suffer from visual impairments and 39 million have diseases and disabilities due to blindness. According to the estimates, 65% of visually impaired and 82 % of blind people are aged 50 (Mariotti, 2012; Carroll et al., 2013). In many developed countries, the number of these pathologies tends to grow, as there are more and more old persons, with a respective demographic decline in these countries. (Klein et al., 2013; Carroll et al., 2013). Eye diseases or visual impairments were associated with many adverse consequences, including increased morbidity and mortality rates, what doubles the risk of falling, decreases quality of life, causes earlier placement to senior centres, social decline, depression, and reduces financial opportunities (Taylor et al., 2016; Kumar et al., 2006; Kanagasingham et al., 2014). The most common eye diseases, affecting the elderly, are Age-Related Macular Degeneration (AMD), cataract, glaucoma, and diabetic retinopathy (Green et al., 2014). These diseases are often asymptomatic at the initial stages, especially if the non-dominant eye is first affected (Hogg et al., 2006).

Improving the frameworks of state management in the healthcare sector in conditions of limited provided resources and thus introducing new forms and methods for organizing the delivery of high-quality medical services to the population of Kazakhstan remains an extremely urgent problem, because today the President of Kazakhstan has designated the reform in healthcare system as one of the most immediate tasks (Strategy of Kazakhstan development, n.d.). That is why the issue of proper scientific support and implementation of European principles of management in health care offer new theoretical, methodological and applied scientific challenges to Russian researchers.

The works of such scientists as V.G. Grigorovich, V.D. Dolot, V.D. Karamyshev, N.P. Krizina, S.A. Kozulina, Z.A. Nadyuk, V.E. Sklyarenko, O.A. Skripnik, I.I. Furtak, N.P. Yarosh and others are devoted to addressing the issues of concern in organizing delivery of medical care to the population. The problems of state management of the development of the health care system in Kazakhstan, that involves organizational, financial, regulatory, control measures and is committed to ensure public satisfaction with medical care based on implementing system-related sector changes, are considered in the scientific works of I. V. Rozhkova, I.M. Solonenko, V.G. Shevtsova. The development of the private health sector in Kazakhstan has become of an in-depth scientific interest to many researchers, among which, first of all, L.A. Buravleva, S.A. Antonyuk are of special note. Scientific works of Ya.M. Pitko are devoted to the particular aspects of reforming sector-specific management at the regional level (Eichenbaum, 2012).

At the same time, such areas as management of the development of special-purpose medical care and the issues of state regulation of the development of private medical care in Kazakhstan remain underdeveloped today. In particular, in conditions of reforming the medical sector, special attention is required to the sphere of organizing special-purpose medical care. The case in point is, above all, the ophthalmic care. Unfortunately, there are few scientific works on this issue, and they mostly relate to the area of medicine (A.P. Vitkovskaya, V.A. Dufinets, N.V. Medvedovskaya, S.A. Rykov).

Currently, in Kazakhstan, among the scientific works devoted to examination of the problems of state management in special-purpose medical care, there is not a single study on solving the problems of management in delivery of ophthalmic care services to the population. To date, the “State Management” science incorporates isolated scientific works that only indirectly refers to the problems of management of the ophthalmic care service. And here it is necessary to emphasize the importance of the scientific heritage of the domestic researcher O. Yu. Filts. In his opinion, today for Kazakhstan, a country, going through the socio-economic, financial and political crisis, the problem of the properly organizing the delivery of special-purpose medical care for outpatients is extremely relevant (Filtz, 2019). This approach is common in European countries. The researcher proceeds from the position that the state

management of special-purpose outpatient medical care is a purposeful and coordinating activity of appropriate management structures and healthcare institutions at the secondary level, aimed at organizing the delivery of special-purpose medical care to outpatients in case of a disease that requires special methods of diagnosis and treatment in both emergency conditions and in as planned, and is provided by properly specialized doctors.

The definition of O. Yu. Filts of the state management of specialized outpatient medical care can be fully accepted and supported, because the context of developing state management of specialized outpatient medical care also involves management of the organization of ophthalmic care related to specialized types of health care (Filtz, 2019). At the same time, of note is the fact that in conditions of reforming the medical sector and a shift in emphasis towards developing primary health care institutions, the problem of organizing delivery of ophthalmic care for outpatients has become extremely relevant. Therefore, to date, a family doctor should not only have relevant theoretical knowledge on how to treat eye diseases, but also be able to provide emergency care in cases of eye injuries, etc. In this regard, the Ministry of Health of Kazakhstan entrusts local authorities with the task of providing primary care institutions with necessary ophthalmological equipment (Rykov, 2018), including both general-purpose (portable ophthalmoscope) and task-specific appliances to deliver specialized ophthalmic care in emergency conditions (intraocular tonometer for measuring intraocular pressure, Rota apparatus, etc.).

In 2017, the researcher N.V. Medvedovskaya, having thoroughly analysed the medico-social aspects of morbidity and ways to optimize medical care for ophthalmological patients, specified the standards for organizing ophthalmic care at the primary and secondary levels (12). Developing this direction, the researcher A.P. Vitovskaya, in 2019 scientifically substantiated a totally new system of organizing ophthalmic care for the population of Kazakhstan on the basis of the proposal to develop and adopt the National Strategy for Combating Primary Glaucoma (WHO, n.d; Vitovska, 2019). Analysis of scientific publications shows that the scientific developments of domestic researchers in the areas under review in the delivery of ophthalmological services to the population are not merely a problem of medical sector, they go beyond the scope of this science. Indeed, the problems of organizing the delivery of ophthalmic health care services to the population and improving the activities of the ophthalmological service have been also considered in interdisciplinary sciences. For example, in technical sciences, the dissertation work of N.A.Komlev, devoted to substantiating the possibility of increasing the accuracy of the results of diagnosing the visual analyser locomotor apparatus, deserves attention.

In modern conditions, there is a certain sequence of organising care for patients with cataracts. A patient, who noticed a decrease in vision in one or both eyes, can seek help from a family doctor or the following Health Care Institutions (HCI): a district polyclinic, an outpatient department of a district or city hospital, a consulting department of the interregional hospital” Vision Correction Centre”, to the consulting departments of private ophthalmology centres or to private ophthalmology offices.

At the primary level of medical care, a family doctor directs a patient with complaints of visual impairment to an ophthalmologist who can work in the outpatient department of the Central District Hospital, city or regional hospital. At will, patients can independently apply to a private ophthalmological office or centre. The next step involves an in-depth ophthalmological examination according to the protocol for treating patients with cataracts. After having found that surgical treatment of cataracts is needed, the patient should undergo an appropriate examination to identify the somatic state and receive a therapist's conclusion about the possibility of surgical intervention. Preoperative examination becomes now increasingly important since persons are currently and commonly receiving outpatient surgical treatment of cataracts. This approach to treatment meets the modern requirements for reforming medical sector but has significant limitations. Firstly, it requires a more thorough examination of a patient with identification and elimination of possible sites of infection in his body. Since the majority of cataract patients are the elderly, most of them have dental problems that can lead to

significant postoperative complications. To prevent this, a thorough oral cavity sanitation is required. Therefore, it makes sense that before surgery patients have, in addition to the conclusion of the therapist, which is drawn up on the basis of regulated examinations and analyses, the appropriate conclusion of the dentist. In addition, all the results of laboratory tests can be used within a month, and during this time a cataract patient may experience health problems (for example, kidneys, ENT organs, joints, etc.), which can lead to postoperative complications. Therefore, since health problems in the process of preparing for the operation are possible, a clinical blood test must be done immediately prior to surgery, especially if outpatient cataract treatment is planned.

Despite a thorough preoperative examination, both in inpatient and outpatient treatment of cataracts, the patient may have various postoperative complications, which include cystic macular oedema, mechanical disorders in the iris, persistent iritis, corneal oedema, leakage or rupture of the postoperative wound, IOL dislocation, infectious endophthalmitis, retinal rupture or detachment (Ioshin et al., 2018; Cheremukhina, 2017). Each of these complications, according to different authors, is quite rare (in 0.3-3.3% of cases). However, the studies carried out in different countries have found that the total volume of complications after phacoemulsification of cataract is up to 8.7% (Haripriya et al., 2019; Kling, 2017; Montanes, 2018; Ding et al., 2019). Despite small percentage of complications observed, it is necessary to take into account the possibility of their occurrence, what requires that a unified system of delivering care to patients with cataract be created, which provides for the possibility of effective interaction between medical institutions of various ownership forms.

Unfortunately, there are no normative documents regulating the interrelations between public and private ophthalmic care institutions that provide ophthalmologically logical assistance to patients with cataracts. Such a system must be created, since in case of complications after the operation, a patient must be hospitalized to a specialized department to receive the necessary treatment. Now, in case of complications, the patient receives appropriate assistance on equal bases, although he has already paid for the treatment in a private clinic. All costs of treatment in a public or communal hospital should be borne by the patient, and the relationship with the private medical centre, where he underwent the operation, should be clarified in court.

In order to provide high-quality ophthalmic care, all HCI (healthcare institutions) to which cataract patients apply, in accordance with the developed model, should be integrated into a single system that will enable improving treatment results, avoiding or reducing the level of postoperative complications. Since private clinics, after obtaining a license, are included in the medical space of Kazakhstan and provide medical services together with state and municipal health care facilities, they should be incorporated into this system.

The proposed model for the integration of HCI (healthcare institutions) of various forms of ownership in delivering surgical care to patients with cataracts takes into account possible risks of post-surgery complications and determines organizational ways to eliminate them, which are shown in the figure with a dotted line.

If a patient was operated out patiently in a state or communal hospital, then, as a rule, he is there for a day or more, what allows, if necessary, for providing additional aid or extend the period of treatment in a hospital for several days. In the diagram, the connection between the outpatient surgery department and the hospital is indicated with a dotted line (Chasan et al., 2014).

If a patient was operated in a private centre, then he is allowed to go home a few hours after the operation. He must be present at the control examination the next day. However, there is always a risk of complications requiring inpatient treatment, therefore, the dotted line in the figure shows the connections between the private centre and state institutions, where it will be possible to provide the patient with the necessary inpatient care. These links between the private centre and the state HCI must be legally formalized, what requires the creation of certain regulatory documents at the level of the Ministry of Health of Kazakhstan. So, on the basis of

international experience, the questions are raised about competence of specialists and professionals, and salaries of doctors in this category.

The purpose of the article is to study the ways of further development of management of the organization of delivering ophthalmic care to the population at the regional level based on the state-of-the-art technology and methods in healthcare, as well as to propose a model of integration in delivering ophthalmic care to a patient with eye diseases.

RESEARCH METHODS AND MATERIALS

This sociological survey involved 21 respondents. Among them, 40% are men, 60% are women. This work presents the results of our own research. This database was processed by the SPSS 23 software program.

RESULTS

When analysing the work, a sociological research method was used. This work was attended by 35 full-time ophthalmologists at the City Clinical Hospital with a polyclinic service, 21 (60%) of which represented the public health care system, and 14 (40%) - the commercial health care sector. Analysis of the doctors' qualification (Table 1):

- In the commercial healthcare sector, 8 (57%) doctors with the highest qualification grade, 6 (43%) with the first qualification grade;
- In the budgetary sphere 6 (28.6%) with the highest, 2 (9.5%) doctors of the state medicine system have no qualification grade, 10 (47.6%) - the first grade, 3 (14.2%) - the second grade. Also, the socio-economic support for professional activities revealed the following indicators:

	Satisfied		Not satisfied		Neither Agree nor Disagree	
	Abs	%	Abs	%	Abs	%
Salary	10	71,4%	2	14,3%	2	14,3%
Salary increments	12	85,7%	2	14,3%	-	-
Bonuses, additional payments, compensations	9	64,3%	3	14,3%	2	14,3%

In this work, the correlation between the variables was 0.356 with the significance of 0.278. *i.e.*, it suggests that these variables are interrelated and satisfaction with salaries has a significant percentage in this study.

	Satisfied		Not satisfied		Neither agree nor disagree	
	Abs	%	Abs	%	Abs	%
Salary	7	33,3%	14	66,6%	-	-
Salary increments	8	38,1%	13	61,9%	-	-
Bonuses, additional payments, compensations	13	61,9%	8	38,1%	-	-

Given the relationship in this variable, the correlation is 0.498 with the significance of 0.129, which also defines the relationship between the variables. And it proves that salary and satisfaction are though closely interrelated.

The question of logistics for the commercial health sector was also explored.

	Satisfied	Not satisfied	Neither agree nor disagree
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	Abs	%	Abs	%	Abs	%
Degree of being equipped with modern medical equipment	13	92,8%	1	7,2%	-	-
State of premises	11	78,6 %	3	21,4%	-	-
Qualification of medical personnel	12	85,7%	-	-	2	14,3%

Given the relationship in this variable, the correlation is 0.490 with the significance of 0.232, which also defines the relationship between the variables. And it proves that salary and satisfaction are though closely interrelated.

Table 4						
BUDGETARY SPHERE						
	Satisfied		Not satisfied		Neither agree nor disagree	
	Abs	%	Abs	%	Abs	%
Degree of being equipped with modern medical equipment	6	28,5%	15	71,4%	-	-
Condition of premises	17	80,9%	4	19,04%	-	-
Qualification of medical personnel	14	66,6%	5	23,8%	2	9,5%

Given the relationship in this variable, the correlation is 0.156 with the significance of 0.009, which also defines the relationship between the variables. And it proves that salary and satisfaction are though closely interrelated.

The next question was a condition for professional growth and development. Thus, 2 organizations were surveyed.

Table 5						
COMMERCIAL HEALTHCARE SECTOR						
	Satisfied		Not satisfied		Neither agree nor disagree	
	Abs	%	Abs	%	Abs	%
Possibility of regular training	8	57%	6	43%	-	-
Possibility of further training	9	64,3%	5	35,7%	-	-
Professional growth opportunity	7	50%	7	50%	-	-
Work using modern equipment and quality materials	12	85,7	2	14,3%	-	-

Given the relationship in this variable, the correlation is 0.189 with the significance of 0.021, which also defines the relationship between the variables. And it proves that salary and satisfaction are though closely interrelated.

Table 6						
BUDGETARY SPHERE						
	Satisfied		Not satisfied		Neither agree nor disagree	
	Abs	%	Abs	%	Abs	%
Possibility of regular training	14	66,6%	6	28,5%	1	4,7%
The possibility of further training	11	52,3%	10	47,6%	-	-
Professional growth opportunity	8	38,1%	13	61,9%	-	-
Work using modern equipment and quality materials	9	42,8%	12	57,1%	-	-

Given the relationship in this variable, the correlation is 0.209 with the significance of 0.213, which also defines the relationship between the variables. And it proves that salary and satisfaction are though closely interrelated.

And traditionally, we could not leave out the issue of the socio-psychological climate in the team.

Table 7						
COMMERCIAL HEALTHCARE SECTOR						
	Satisfied		Not satisfied		Neither agree nor disagree	
	Abs	%	Abs	%	Abs	%
Relationship with management	13	92,8%	-	-	1	7,2%
Relationship with colleagues	10	71,4%	4	28,6%	-	-

Given the relationship in this variable, the correlation is 0.289 with the significance of 0.253, which also defines the relationship between the variables. And it proves that salary and Satisfaction are though closely interrelated.

Table 8						
BUDGETARY SPHERE						
	Satisfied		Not satisfied		Neither agree nor disagree	
	Abs	%	Abs	%	Abs	%
Relationship with management	14	66,6%	5	23,8%	2	9,5%
Relationship with colleagues	15	71,4%	6	28,5%	-	-

Given the relationship in this variable, the correlation is 0.489 with the significance of 0.329, which also defines the relationship between the variables. And it proves that salary and satisfaction are though closely interrelated.

And the question about organizational conditions for professional activity is still relevant today.

Table 9						
COMMERCIAL HEALTHCARE SECTOR						
	Satisfied		Not satisfied		Neither agree nor disagree	
	Abs	%	Abs	%	Abs	%
Working hours	12	85,7%	2	14,2%	-	-
Overall stability and reliability of work	9	64,3%	3	21,4%	2	14,2%
Number of patients per doctor's rate	8	57%	6	43%	-	-

Given the relationship in this variable, the correlation is 0.499 with the significance of 0.359, which also defines the relationship between the variables. And it proves that salary and satisfaction are though closely interrelated.

Table 10						
BUDGETARY SPHERE						
	Satisfied		Not satisfied		Neither agree nor disagree	
	Abs	%	Abs	%	Abs	%
Working hours	9	42,8%	12	57,1%	-	-
Overall stability and reliability of work	15	71,4%	4	19,04%	3	14,2%
Number of patients per doctor's rate	12	57,1%	9	42,8%	-	-

Given the relationship in this variable, the correlation is 0.399 with the significance of 0.259, which also defines the relationship between the variables. And it proves that salary and satisfaction are though closely interrelated.

DISCUSSIONS

So, as the study shows, the problem of managing the organization of delivering ophthalmic care to the population is most developed in medical, legal and technical sciences. By now, as the conducted analysis has shown, no comprehensive study of public relations in organizing the delivery of ophthalmic health care to the population was carried out within the “State Management” science. All of the above-stated confirms in an unbiased manner that the management system of organizing the delivery of ophthalmic care to the population needs to be improved, and motivates to continue further research in this area.

Despite the high incidence of eye disease, there is a shortage of doctors, funds and, in particular, nurses. In addition, the role of psychological dispositions as risk factors for burnout and compassion fatigue remains poorly studied, not only among ophthalmologists, but also among healthcare professionals in general.

In Kazakhstan, as in most developing countries, the demand for skilled eye care is exacerbated by a shortage of medical personnel due to such factors as aging, low salaries, and limited career opportunities. Moreover, our country has a high level of staff turnover and vocational leave, and even the tendency of doctors to migrate to economically developed countries has contributed to the low ratio between doctors and population over the past decade. Globally, health systems, and eye care in particular, suffer from significant health manpower shortages and face similar challenges such as burnout, high staff turnover and a lack of research in eye care. The financial aspect of health care was among the main driving forces in the adoption of the health care management model because the institutions that had implemented this model had “lower total costs per patient, shorter hospital stays, increased patient turnover, and potential increased income. Even to the uninitiated, it would seem obvious that reduction of medical personnel to save money could jeopardize the well-being of eye disease patients in ophthalmic care. Reducing staff to save money can extend patient stays and increase complications, including mortality, and thus increase costs. Finally, and perhaps most importantly, the care of patients with eye diseases can be quantified as the most essential component of patient care and well-being.

In Kazakhstan, the research in the field of ophthalmological care is in its infancy, therefore, there is an urgent need to not only optimize the management and role of ophthalmic care at different levels of the medical institution, but also a need to reevaluate the concept of this care in general, as well as a need to develop ophthalmological research and education in our country.

According to this study, the results showed satisfaction both in commercial and budgetary organizations, with almost the same percentage of satisfaction.

Thus, the analysis of the organization of ophthalmic care for patients with cataract in Kazakhstan allowed us to identify the most significant problems: it is necessary to develop and implement regulatory documents governing the interaction of state, utility, and private structures, especially in the outpatient treatment of cataracts; it is necessary to introduce into healthcare an optimized model of ophthalmic care for cataract patients, which combines healthcare institutions of various forms of ownership.

The introduction of an optimized model will allow, thanks to organizational measures, the appropriate material and technical support, the use of sectoral clinical protocols, modern outpatient treatment technologies and training of qualified specialists, creation of equal conditions for receiving quality medical care for cataract patients in hospitals of various forms of ownership (26).

CONCLUSIONS

Prospects for further research constitute the scientific justification of developing the concept of delivering the ophthalmic care to patients with cataracts in conditions of reforming the Kazakhstan healthcare system. As a result of the study, simple algorithms will be developed for doctors and the population with hard-to-reach medical care. The proposed recommendations and algorithms will be offered as a recommendation for making changes in the protocol of

treatment and diagnostics of the Republic of Kazakhstan. Optimization paths for doctors with different funding levels will also be developed. Since the research has shown that the first stage involves urgent economic component of this issue, the cost estimates will be presented for improving and implementing the algorithm for the management of ophthalmic care for the population within the jurisdiction of local executive bodies.

Finally, I would like to hope that the role and value of introducing the algorithms for the enhancement of care for ophthalmological patients at different levels of medical institutions, such as hospital and primary health care, will find its niche in healthcare of the Republic of Kazakhstan. And my work will be among those scientific works that have contributed to changes and adjustments in the development of ophthalmic care in both hospitals and primary health care services.

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