



# The Assessment of the Drug Assistance Availability to Ophthalmic Patients

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## Abstract

One of the most important conditions for ensuring the drug assistance availability to ophthalmic patients is the availability of a range of medicines on the pharmaceutical market that satisfy the needs of consumers to the maximum extent. SCOPE OF THE RESEARCH consists in conducting the marketing analysis of the ophthalmic drugs (OD) market and identifying the economic and physical accessibility of drug assistance to patients with vision pathology. METHODS of the research were as follows: marketing analysis, sociological research (questioning, interviewing), variation statistics, logical and graphical analysis. The subjects of the study were the data on ophthalmic preparations registered in the Russian Federation and average prices for the Moscow region, as well as data from a sociological survey of 675 OD consumers. RESULTS: On the Russian pharmaceutical market, OD are represented by 315 trade names and 112 international nonproprietary names, various manufacturers (foreign ones predominate with 66.7%), in various pharmaceutical forms, and with a wide price range (every third drug is in the lower price segment below RUB 100). More than half of consumers (57.5%) acquire drugs to treat eye diseases as prescribed by a doctor. The majority of consumers are satisfied with the number and location of pharmacies (approximately 80%) as well as the OD range and the prices of these drugs (2 out of 3 consumers are satisfied with the OD price, describing it as very low, low or medium). CONCLUSION: The studies have identified and justified the physical and economic availability of drug assistance to ophthalmic patients. The availability indicators provide a wide choice of OD, taking into account modern methods of drug therapy, the individual characteristics of the disease, as well as preferences and financial opportunities of the OD consumers.

**Keywords:** consumer behavior, ophthalmic dosage forms, ophthalmic drugs, pharmacotherapy of patients with vision pathology, physical and economic accessibility of drugs.

## INTRODUCTION

The main objective of the Russian State social policy is to gradually increase the level and quality of life, observing the basic social guarantees, including ensuring affordable and quality medical and drug assistance for patients with eye diseases. [1] One of the most important conditions for ensuring the drug assistance availability for the population is the availability on the Russian pharmaceutical market of a range of medicinal drugs (MD) that satisfy the needs of consumers to the maximum extent. This allows expanding significantly the choice of the MD used for the treatment and prevention of ophthalmic diseases, taking into account modern pharmacotherapy techniques, individual features of the disease development, as well as preferences of ophthalmic drug (OD) users.

Many domestic [1-9] and foreign scientists [10-12] were involved in the problem of improving the quality and availability of drug provision for various categories of patients at all stages of medical care. At the same time, indicators of economic and physical availability of drug assistance to ophthalmic patients have not been revealed to date. The urgency of the problem has caused the formulation of the scope of the research.

Scope of the research consists in conducting the marketing analysis of the OD market and identifying the economic and physical accessibility of drug assistance to patients with vision pathology.

## MATERIALS AND METHODS

To achieve this goal, a marketing approach has been used and implemented through an algorithm that includes 3 phases: 1. Marketing analysis of the OD market; 2. Assessment of the OD physical availability; and 3. Analysis of the OD economic availability.

The objects of the research were also the survey data of 675 OD consumers; information on OD registered in the Russian Federation and their average prices in the Moscow region.

## RESULTS AND DISCUSSION

### Marketing analysis of the OD market

To identify the current situation on the OD market, we had conducted the marketing research, the results of which allowed revealing the following aspects. On the Russian pharmaceutical

market, OD are represented by 315 trade names and 112 international nonproprietary names (INN). In the structure of the INN and trade names, the majority of the drugs belong to group S01 "Ophthalmic preparations" (97.4%) according to the ATX classification, and the rest - to S03 "Preparations for the treatment of eye and ear diseases" (2.6%). Preparations of group S01 are distributed among 11 subgroups (Figure 1), with half of the drugs (50.3% by trade names) represented by 2 subgroups "Antiglaucoma drugs and miotic agents" (26.9%) and "Antimicrobial drugs" (23.4%).

Every 5th drug of the S01 group (21.4%) is included in the List of Life-Saving and Essential Drugs, and every 3rd (34.9%) is allowed for sale without a doctor's prescription.

The analysis of the OD by countries and manufacturers shows that foreign manufacturers dominate the market (66.7%), which is represented by 19 countries. In the structure of the drugs imported to the Russian pharmaceutical market, the largest share (18.9%) belongs to 23 preparations manufactured in Switzerland, India (14.8%) and Germany (11.5%).

The share of the registered trade names of domestic producers of the total number of medicines used to treat eye diseases is 33.3%.

Preparations for the treatment and prevention of eye diseases are represented by different dosage forms. The eye drops (66.3%) being highly relevant to the requirements for the OD in terms of their effectiveness, usability and safety are the most common dosage forms for ophthalmic practices. The share of solutions for treatment and storing contact lenses on the OD market is large enough (11.9%), which is explained by the preferences of contact lenses' consumers. The ointments and gels that allow achieving prolonged contact of the medicinal substance with the surface of the eye and eyelid account for 6.3% and 2.6% in the structure of drug formulations, respectively.

The price range of the OD varies from RUB 13.2 to 3,384.5 per pack. To identify the prevailing real price situation on the market, the OD have been grouped by the price range with the classification step equal to 2.

When analyzing the prices, it has been found that 1 out of 3 drugs (34.3%) is in the lower price segment below RUB 100, where the average price is RUB 43.12 per package. This group includes the widespread and commonly prescribed drugs that are produced by many pharmaceutical companies, mostly Russian ones, in

different dosage forms. The share of the drugs in the price range from RUB 100 to 200 is 17.5%; the average price is RUB 154.55. The drugs of the price segment in the range from RUB 200 to 400 account for 22.3% of the market. Thus, the bulk of drugs (73.5%) are in the segment below RUB 400. The drugs with the price of RUB 400 to 800 account for 21.1% of the market. Only 4.8% of the OD are in the upper qualification segment and have prices above RUB 800, where the average price of a package is RUB 901.94.

Thus, the marketing analysis of the OD market has shown that domestic and imported drugs are being sold on the Russian pharmaceutical market. A variety of names, dosage forms, and a wide price range of OD allow prescribing drug therapy taking into account the individual characteristics of patients' diseases and the level of their income. With a view to a possible increase in the quality of drug assistance to ophthalmic patients on the following stages of the study, we assessed the physical and economic availability of the OD.

#### Assessment of the OD physical availability

The concept of physical availability was considered by us from several positions, such as the availability of the OD range (satisfaction with the range availability), motivational availability, involving the study of the consumer's preferences (motivation) when selecting the OD, and also territorial availability, i.e. rational distribution and the number of pharmacy organizations.

The analysis of the survey data of 675 OD consumers has shown that the OD range available in the pharmacy organization completely satisfies or, as a rule, satisfies the absolute majority of the consumers interviewed (Figure 2).

At the same time, the satisfaction with the OD range of the actual consumers which were surveyed in the pharmacy organization was 1.5 times higher than that of the latent consumers, which were surveyed outside the pharmacy organizations, including those in medical organizations before or after attendance of an ophthalmologist (58.1% and 38.2%, respectively). The latent consumers are the respondents who previously purchased the OD and did not exclude the possibility of a repeated purchase. Only

3.8% of the actual consumers did not always find the right drug in the pharmacy organization, while among latent consumers this figure was almost 3 times higher, and was 10.3%.

The analysis of the sociological survey results has shown that the absolute majority of the OD consumers (86.4%) agree with the opinion about the annually increasing burden on their eyesight, including by increasing the duration of work at the computer, both during working hours and at home. At the same time, every 2 out of 3 respondents (67.8%) say that their average eye load is more than 7 hours per day. Vision problems with regularity once per month and more often occur in the absolute majority of the actual OD users (87.0%), including the fact that every 5th respondent (20.8%) constantly faces this problem. At the same time, almost ¾ of the consumers (73.3%) do not consult the ophthalmologist on a regular basis, only 1 in 10 respondents (10.2%) visits the physician monthly or 1 time in half a year (13.0%), and 3.5% of visitors to pharmacy organizations have never consulted a doctor. Moreover, the majority of OD users (69.5%) understand that the inability to visit an ophthalmologist can significantly affect the efficiency of the treatment prescribed by the doctor.

A study of the motives for purchasing OD has shown that more than half of consumers (57.5%) acquire drugs to treat eye diseases as prescribed by a doctor. At the same time, since more than 1/3 of the OD sold on the Russian pharmaceutical market are allowed for sale without a doctor's prescription, the most important factors for consumers when choosing drugs are their own experience of application and recommendations of pharmaceutical specialists. Thus, 22.7% of consumers were guided by their own experience when choosing OD, and every 6th consumer (14.7%) made a purchase on the recommendation of a pharmaceutical specialist, and the percentage of women's confidence in him/her was 3 times higher than that of men. When selecting OD, the least significant factors for consumers were the experience of friends or relatives and the advertising information in the media (2.8% and 2.3%), with women being targeted by advertising 2.6 times more often than men.

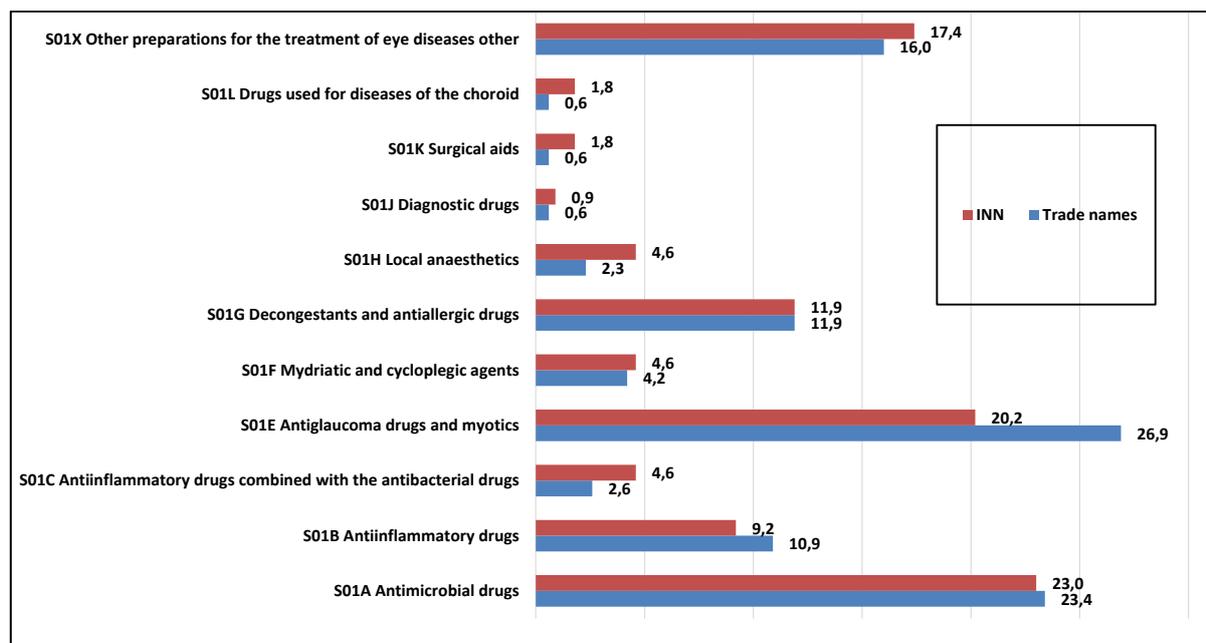


Figure 1 – Structure (in %) of group S01 "Ophthalmic preparations"

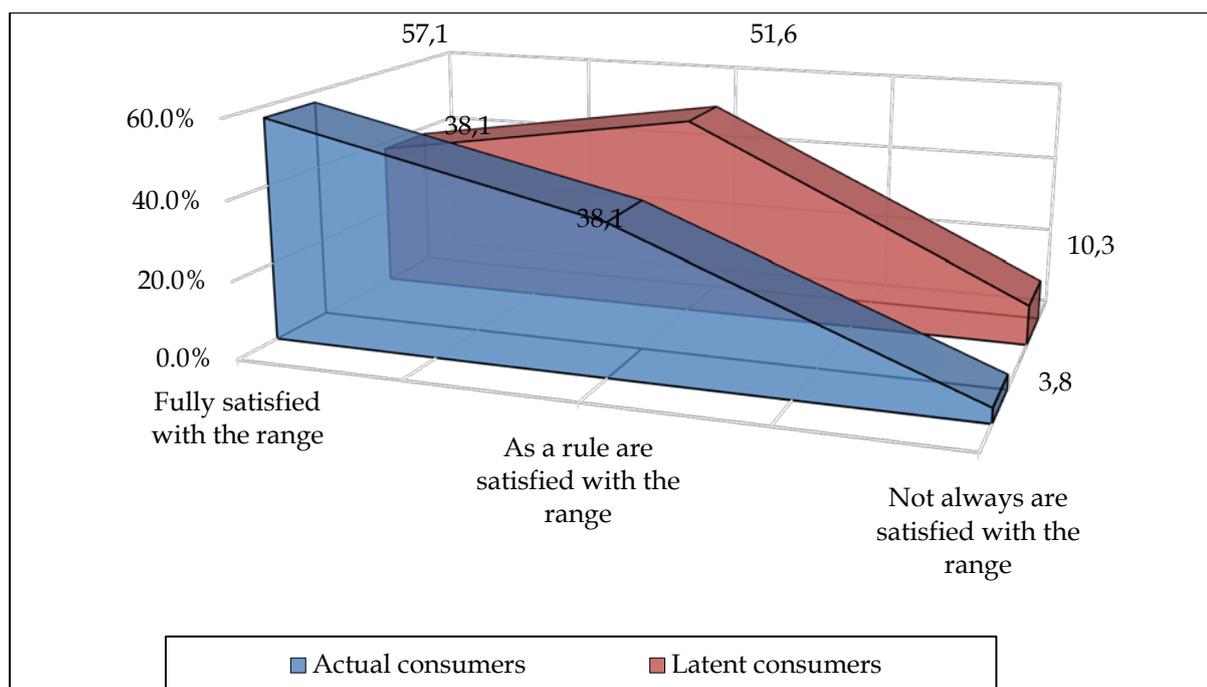


Figure 2 – Structure of consumer satisfaction with the range of OD available in pharmacy organizations

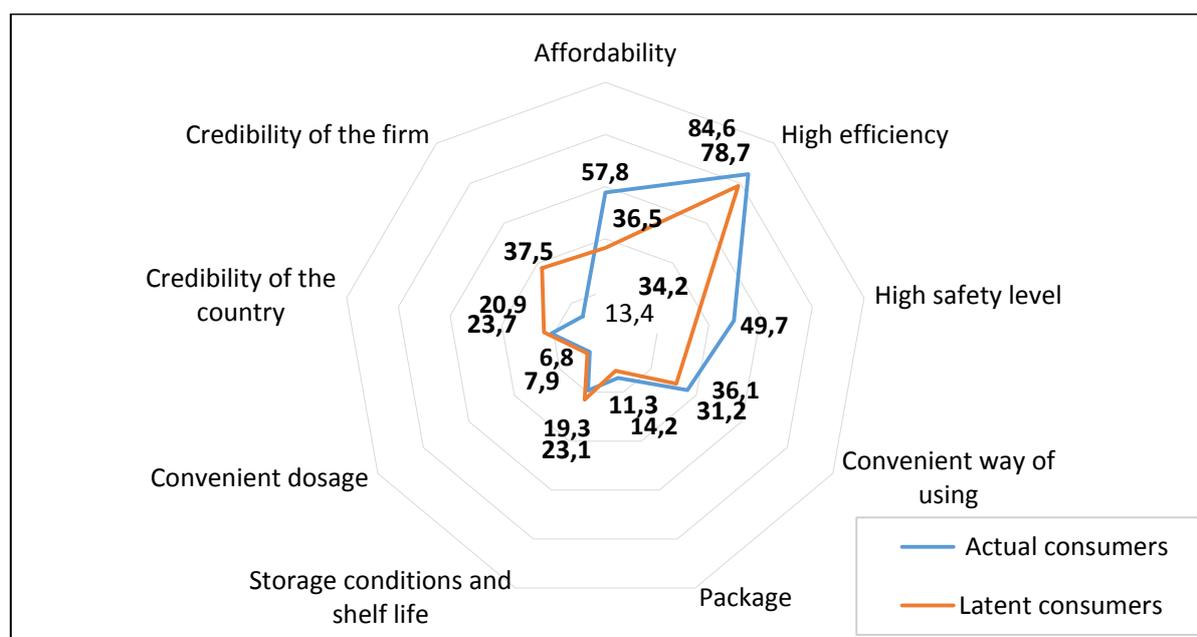


Figure 3 – Distribution of consumers (in %) by the importance of specific drug characteristics for them when selecting OD

One of the key factors determining the behavior of the OD consumers in the absence of the necessary drug in the pharmacy organization are the recommendations of a pharmaceutical specialist who has the right to replace the missing drug with another only within one INN (generic replacement) without consulting a physician. Our studies have shown that in the absence of the necessary drug 72.8% of visitors of the pharmacy organization agree for the proposed replacement. 2.3% and 13.7% of the OD consumers, respectively, refuse the proposed replacement, focusing exclusively on the experience of using DP, and prefer to seek for the necessary drug (usually prescribed by a doctor) in another pharmacy. Only every 10th (11.2%) visitor to the pharmacy organization visits the doctor repeatedly in the absence of the

requested drug. Such behavior of consumers is due to their firm belief in the need to purchase a specific drug prescribed by the doctor and to continue searching for it in pharmacy organizations, on the one hand, and due to significant time spent for a repeated visit to the doctor, on the other hand. Analysis of the consumers' preferences regarding the presentation of the OD has shown that the majority of consumers (76.8%) prefer eye drops. 14.9% of consumers do not have a preference for any dosage form, and 8.3% of respondents prefer other dosage forms (eye gel - 5.1%, and ointments - 3.2%). It has been established that the half of the consumers (52.0%) prefer imported drugs; 39.5% do not have preferences, and 8.5% choose domestic drugs. OD consumers prefer imported products because they consider them more efficient (50.8% of the

respondents expressed this opinion), more reliable and time-tested (40.5%), having an optimal price-quality ratio (24.8%), and with a lower probability of falsifications (9.8%).

The results of the sociological survey data analysis showed that when selecting the OD, the high efficiency and affordability (this was the opinion of 82.4% and 49.0% of respondents, respectively), as well as high safety and convenient use (37.9% and 29.4%) were the most significant characteristics for consumers [3]. However, studies within 2 groups of (actual and latent) consumers have revealed significant differences in the assessment of the significance of specific drug characteristics for them (Figure 3).

Thus, when selecting OD, actual consumers are guided by the price of a preparation 1.6 times more often than latent consumers (57.8% and 36.5%). In addition, actual consumers are guided by the high safety of the drug 1.5 times more often than latent consumers (49.7% and 34.2%). At the same time, for latent consumers, the credibility of the manufacturer is almost 3 times more important factor when selecting the OD than for actual consumers (37.5% and 13.4%).

31.2% of the OD consumers consider the location of pharmacies in the district/city to be not rational enough, explaining this by the fact that pharmacy organizations are grouped, as a rule, near metro stations or along central streets. The absolute majority of consumers are satisfied with the number of pharmacies in the district/city. Only 9.0% of the respondents believe that there are not enough pharmacies in their district/city; however, according to 8.3% of the consumers, the number of pharmacies is even redundant.

The identified consumer preferences in import drugs in the form of eye drops, corresponding to the actual structure of the market analyzed, as well as customer satisfaction with the number of pharmacies and their range of drugs let us talk about the physical availability of the OD for an overwhelming majority of consumers.

#### **Assessment of the OD economic availability**

The economic availability of OD for the population is determined by the rational pricing policy of pharmacy organizations and the financial possibility of an acquisition, i.e. the consumer purchasing power.

From this perspective, we found it expedient to carry out a sociological study to assess consumers' perceptions of the price of the OD purchased. Taking into account the fact that the perception of the price by the consumer is a subjective impression of the prices objectively existing at the market, we've used a nominal scale with 5 gradations of the price range from very low to very high one.

The results have shown that about half (42.3%) of the consumers believe that the price at which they bought the OD is an average one. The cost of the OD in this segment is RUB 324.4 per package. Every fifth consumer (19.1%) perceives the price of the purchased product as low, and 5.7% of consumers - as very low. The average price of drugs in these segments is RUB 189.1 and RUB 68.7 per package, respectively. It has been established that every 4th buyer (24.1%) acquiring OD at an average price of RUB 616.7 per package considers it as high. Another 8.8% of the consumers perceive the price as very high, while the average price of OD in this segment is RUB 926.1 per package.

It should be emphasized that the average price of drugs purchased by consumers in each of the segments corresponds to the price range presented in the Russian pharmaceutical market and described above. Thus, the drugs, the prices for which are noted by consumers as very low, refer to the lower price segment of the market below RUB 100. The average segment from RUB 200 to 400 correlates with the buyer's view of average prices, and the upper segment (above RUB 800) - with very high prices.

Thus, 2 of 3 consumers (67.1%) are satisfied with the price set on the market for a particular drug, describing it as very low, low or medium one. However, for 1/3 of the consumers (32.9%), prices for OD are high or even very high. At the same time, significant price variability and the number of the OD sold on the market make it possible to replace one drug with another one which is cheaper within one INN (in a pharmacy organization) or a drug of the same class (therapeutic replacement performed only by a physician), which ensures price accessibility of the OD for consumers with different income levels.

#### **CONCLUSION**

The studies have identified and justified the physical and economic availability of drug assistance to ophthalmic patients. It has been established that ophthalmic preparations of various manufacturers are being sold in the Russian pharmaceutical market in a variety of dosage forms and with a wide price range. The majority of consumers are satisfied with the number and location of pharmacies, as well as the OD range and their prices. The indicators of physical and economic availability provide a wide choice of OD, taking into account modern methods of drug therapy, the individual characteristics of the disease, as well as the preferences and financial opportunities of the OD consumers.

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