UDC 615.1:380.13 (574)
DOI: 10.15587/2519-4852.2023.267787

ANALYSIS OF THE CURRENT STATE OF THE PHARMACEUTICAL MARKET OF THE REPUBLIC OF KAZAKHSTAN

Kairat Zhakipbekov, Olga Posylkina, Narbek Zhumabayev, Ubaidilla Datkhayev, Nurdaulet Zhumabayev, Almira Almurzaeva, Arailym Mukanova

This article analyses the current state of the pharmaceutical market of the Republic of Kazakhstan for the period 2015–2021 and diagnoses the current problems of pharmaceutical production.
The aim: *to identify the current trends of the pharmaceutical market in the Republic of Kazakhstan, its specific features and prospects for the development of domestic pharmaceutical production.*
Materials and methods: *statistical data, survey results, mathematical-statistical and analytical comparative methods, SWOT analysis.*
Research results: *according to the results of statistical analysis, pharmaceutical production increased by 101.1 billion tenges in monetary terms compared to 2015, and the export of domestic products increased by 13.3 billion tenges. In 2020, the export of medical preparations due to supplies to Russia amounted to 76.5 %, to Kyrgyzstan 6.5 % and Uzbekistan 4.8 %, to other countries – 12.3 %. It is estimated that the volume of the pharmaceutical market of the Republic of Kazakhstan in 2020, compared with 2019, increased by 21.3 % as a result of the development of domestic production and the implementation of the state support program. The total number of medicines registered in the republic is 7449, and the share of domestic production is 13.1 % (978 medical preparations), and 6471 medicines, 86.9 %, are imported. In addition, 9154 medical devices have been registered, and the share of domestic products is 90 %.*
Online direct expert survey (questionnaire) indicates that the respondents are female pharmacists (74.5 %) aged 36 to 55 years old (52.3 %) with 26-30 years of work experience (32.3 %), who noted the strengths of the development of the pharmaceutical industry in Kazakhstan (U=1.35), as readiness for modernisation and state support (47 %), political stability (44 %), weaknesses (U=1.35) – insignificant capacity of the pharmaceutical market (55.5 %), limited range of domestic pharmaceutical products and substances (50.9 %), opportunities (U=1.4) – active investment policy (62.7 %), expansion of digital and remote channels (25.4 %), threats (U=1.4) – import dependence (69.9 %), high volatility of the tenge exchange rate (24.1 %).
Based on the pharmaceutical market analysis and expert survey of specialists, a strategic matrix of SWOT analysis was built.
Conclusion. *As a result of the analysis, the dependence of the pharmaceutical industry and the pharmaceutical market on imported foreign medicines and substances were revealed. However, the volume of pharmaceutical products produced in the Republic of Kazakhstan increases annually. Therefore, for the further development of the pharmaceutical industry of the Republic of Kazakhstan, considering its import dependence, additional funding is needed for research and educational activities for the development of innovative medical preparations and substances*
Keywords*: pharmacy, pharmaceutical market, medical preparations, medical products, pharmaceutical production, SK-Pharmacy, SWOT analysis, questionnaire, strategic matrix, Republic of Kazakhstan*

How to cite:
Zhakipbekov, K., Posylkina, O., Zhumabayev, N., Datkhayev, U., Zhumabayev, N., Almurzaeva, A., Mukanova, A. (2023). Analysis of the current state of the pharmaceutical market of the Republic of Kazakhstan. ScienceRise: Pharmaceutical Science, 2 (42), 57–67. doi: http://doi.org/10.15587/2519-4852.2023.267787

1. Introduction

In Kazakhstan, the issue of providing the population with affordable medical and pharmaceutical services is one of the most important areas of state policy following the goals of the National Medical Policy [1, 2], which in turn is a very costly and complex integration structure [3]. At the same time, personnel management plays an important role in the implementation of this policy [4], in particular, the planning of additional seasonal demand for pharmaceutical staff [5], the formation and development of communicative competence in the process of continuous professional training in the field of pharmacist communication [6], the formation of a pharmaceutical cluster [7], etc. At the same time, the pharmaceutical market is one of the highly profitable and rapidly developing sectors of the global economy and the driving force of the country's economy and social development [8]. The development of the pharmaceutical industry is a determining factor in the highly innovative prosperity of the state economy and an indicator of the level of well-being of the population [9].

Article 1 of Section I of the Constitution of the Republic of Kazakhstan states that the Republic of Ka-

zakhstan asserts itself as a democratic, secular, legal and social state, with man, his life, and his rights and freedoms as its highest values, respectively, given that the most valuable wealth of our state is a man and human life, the priority direction of the policy of providing citizens of the Republic of Kazakhstan with medicines is to provide the population with effective, safe and affordable medicines [6]. To achieve an effective level of providing consumers with medicines, first of all, it is necessary to develop the national pharmaceutical industry [10], or rather, develop and produce medicines from domestic plant raw materials. At the present stage of development of the pharmaceutical industry, such plant materials include the following home medicinal plants: Nicotiana Tabacum L. [11], Carthamus Tinctorius L. [12], Portulaca Oleracea L. [13], Brassica Napus L. [14], Plantago Major L. [15], etc. Due to the high dependence of the Kazakh pharmaceutical market on imported products, increasing domestic pharmaceutical production is a priority for the formation of economic independence and national security of the state.

According to Fortune Business Insights experts, in 2020, the cost of global pharmaceutical production amounted to $ 1.12 trillion; by 2023 it is projected to increase to $ 1.57 trillion. The impact of pharmaceutical industry revenues on the gross domestic product (GDP) is also increasing. The global sales of exported medicines from 116 countries amounted to 392.9 billion US dollars [16].

2. Planning (method logy) of research

The "Quality by Design" principles (Table 1) were used to plan the study.

Table 1

Planning of the research

Step 1	Critical assessment of the statistical data of the pharmaceutical market of the Republic of Kazakhstan
Step 2	Online direct expert survey (questionnaire) for SWOT analysis to identify conditions for the development of the pharmaceutical industry of the Republic of Kazakhstan
Step 3	Strategic matrix of SWOT-analysis of the pharmaceutical industry of the Republic of Kazakhstan

3. Materials and methods of research

During the analysis of trends in the development of the pharmaceutical market of the Republic of Kazakhstan, the materials presented in the open dialogue section of the government, as well as statistical data on pharmaceutical production given in the letter of the Minister of Industry and Infrastructure Development of the Republic of Kazakhstan, statistical data of the Ministry of Health and the single distributor "SK-Pharmacy", as well as statistical data given in the publications of JSC "Center of Kazakhstan Industry and Export".

The volume of pharmaceutical products and the level of exports of pharmaceutical products for 2015–2021 were compared, and growth indicators in monetary and volume ratios were identified. The analysed indicators were processed using a statistical analysis package – Statistica (version 12.0, StatSoft, Tulsa, USA). The value of $p<0.05$ was considered statistically significant.

To conduct a SWOT analysis, in order to identify conditions for the development of the pharmaceutical industry of the Republic of Kazakhstan, an online direct expert survey (questionnaire) was carried out with the involvement of 153 pharmaceutical workers (respondents) based on a specially designed questionnaire. Uploaded to Google Forms (https://www.google.com/intl/ru/forms), the questionnaire was compiled in three languages (Kazakh, Russian and English), consisting of four parts – an introductory (preamble), a socio-demographic block (passport), the main block and the final part (detector). The introductory block (preamble) contained a greeting, an appeal to the respondent, an explanation of the study's objectives, and a condition for conducting and ranking on a 5-point scale. The socio-demographic block consisted of questions characterising the respondent himself, his gender, marital status, age, education, speciality, academic degree and academic title, and work experience in the pharmaceutical field. The main block contained questions aimed at assessing strengths and weaknesses, opportunities and threats for the pharmaceutical industry of the Republic of Kazakhstan. The final part included words of gratitude to the respondent and the contact information of the researcher. This study was reviewed and approved at a meeting of the Local Ethical Committee of the Asfendiyarov Kazakh National Medical University No. 5 (128) dated April 27, 2022 (application No. 1363). Based on the survey results, a strategic SWOT analysis matrix for the pharmaceutical industry was built.

4. Research results

The intensity of development of the Kazakhstan pharmaceutical market is increasing every year. In 2021, the growth of the pharmaceutical market compared to 2020 amounted to 14.3 %. In monetary terms, in 2021, the volume of the pharmaceutical market reached 765.3 billion tenge. The main share of the market is retail turnover – 445.97 billion tenge (58 % of the total market volume); its growth rate is 10.4 %. Public procurement amounts to 319,3 billion tenges (42 % of total market volume), including the provision of medicines in outpatient conditions – 162.06 billion tenges, and in-patient – 157,25 billion tenge, which is 20,1 % higher compared to 2020 (Table 2) [17].

A comparison of the import and export of medicinal products concerning the state and retail sectors of medical supply showed that the import of medicines in 2021 would amount to 644.16 billion tenges (84 % of the total market volume), of which 248.1 billion tenges accounted for by the state provision of medicines, retail sales amount to 396.07 billion tenges. The share of domestic producers will amount to 121.11 billion tenges (16 % of the total market volume), of which the state segment accounts for 71.2 billion tenges and the retail segment – 49.9 billion tenges.

Currently, there are 96 production sites in the Republic of Kazakhstan whose activities are related to

pharmaceutical and medical provision for the population, including 33 manufacturers of medical drugs, 41 manufacturers of medical devices, and 22 manufacturers of medical equipment. There are 17 pharmaceutical manufacturers and 23 production sites operating in accordance with the requirements of good manufacturing practices of GMP [18, 19].

According to official data of the Ministry of Health of the Republic of Kazakhstan for 2020, the total number of medical products registered in the country amounts to 7449 items, the share of domestic production is 13.1 % (i.e., 978 medical preparations), and 86.9 % of medicines, i.e., 6471 drugs, are imported [20]. And, in the Republic of Kazakhstan, 9154 medical products are registered, the share of domestic products is 916 (10 %), and foreign-made products are 8238 items (90 %) [21].

According to the Ministry of Industry and Infrastructure Development of the Republic of Kazakhstan, by the end of 2020, there was an increase in pharmaceutical production by 15 % in physical terms, which in volume terms amounted to 39,402 tons. By the end of 2020, the production of pharmaceutical products in monetary terms amounted to 138.3 billion tenge. The actual increase was 47 %, 0.52 % of industrial production and 1.06 % of industrial processing production [19]. If in 2015, the volume of pharmaceutical production was 37.2 billion. In 2020, its volume reached 138.3 billion tenge (i.e., an increase of 142.5 %). The increase in the volume of domestic production is associated with the participation of companies in public procurement within the guaranteed volume of free medical care, as well as with an increase in demand in the retail market (Fig. 1).

Kazakhstan is a state with high investment attractiveness. In 2019, investment in the main capital of pharmaceutical production amounted to 9.9 billion tenge.

Leaders of pharmaceutical production by regions of the Republic of Kazakhstan are as follows: Shymkent city (39.2 %), Almaty region (23 %), Almaty city (20.6 %), Karaganda region (10.8 %) (Fig. 2).

Table 2

Structure of Kazakhstan pharmaceutical market for 2020–2021 in money terms, billion tenge

Market segment	2020			2021		
	Amount, bln. tg.	The number of units of goods, mln. units.	Price per 1 item	Amount, bln.tg.	The number of units of goods, mln. units.	Price per 1 item
State pharmaceutical provision:	265.96	137.86	1929.12	319.30	129.54	2464.9
– in-patient	129.56	109.26	1185.80	157.25	98.21	1601.11
– Outpatient	136.40	28.61	4768.19	162.06	31.33	5172.66
Retail sales	403.80	628.41	642.58	445.97	591.47	754.01
Pharmaceutical market results	669.76	766.28	874.05	765.27	721.01	1061.40

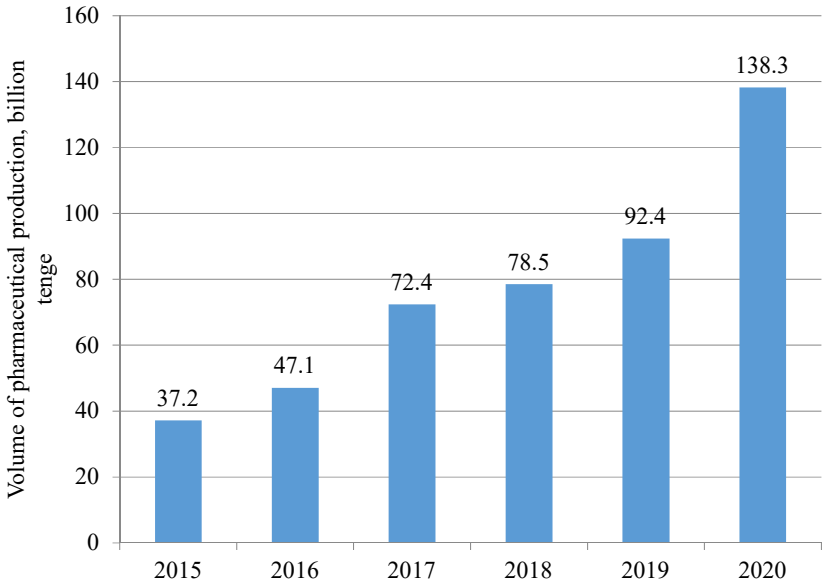

Fig. 1. Dynamics of pharmaceutical production volumes in the Republic of Kazakhstan, billion tenge

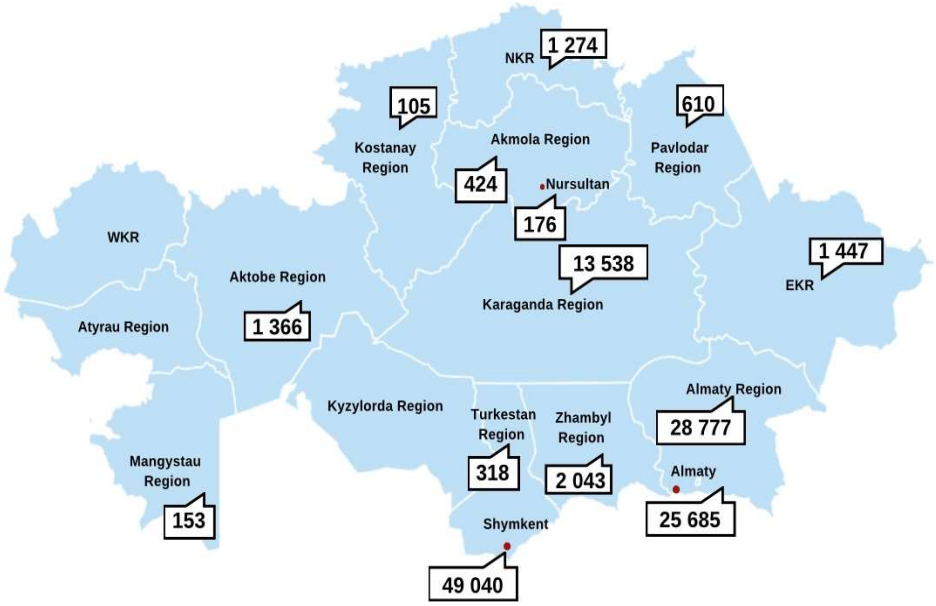

Fig. 2. The indicators of pharmaceutical products in the Republic of Kazakhstan in the regional context for January – November 2020, million tenge: WKR – West Kazakhstan Region; EKR – East Kazakhstan Region; NKR – North Kazakhstan Region

Comparative indicators of production volumes of major pharmaceutical products for January 2019–November 2020 are shown in Fig. 3.

The export of domestic pharmaceutical products in 2020 amounted to 58.7 million USD (in 2019 – 58.9 million USD), including the supply of medicinal preparations to Russia (76.5 %), Kyrgyzstan (6.5 %) and Uzbekistan (4.8 %) (Fig. 4).

Imports of pharmaceutical products to the Republic of Kazakhstan in January–October 2020 amounted to 1,220.4 million USD, which is 31.2 % higher than this indicator in 2019 (Fig. 5).

The import/export ratio for the period January–November 2020 for the main types of pharmaceutical products is shown in Table 3.

One of the measures to support domestic production is the conclusion of long-term contracts with domestic producers and customers of contract production for ten years. As a result, a single distributor of pharmaceutical products in the Republic of Kazakhstan, in accordance with Article 247 of the Code of the Republic of Kazakhstan "On the Health of the People and the healthcare system", is "SK-Pharmacy" LLP [22].

Currently, there are 96 Long-term contracts concluded with 36 domestic producers for the supply of 5,009 pharmaceutical products (811 medicines and 4,198 medical devices), of which 43 long-term contracts were concluded for medicines and 53 long-term contracts for medical devices (Fig. 6) [23].

Table 3

Import/export ratio by main types of pharmaceutical products for January–November 2020

Product name	Export, %	Import, %
Medication from individual substances or mixtures of substances	85.8	53.3
Veterinary vaccines	5.5	1.4
Medication containing antibiotics	3.8	6.9
Human Blood	2.3	10.3
Medication containing penicillins	1.0	1.5
Medication containing alkaloids	0.7	2.9
Medication containing mixed or unmixed products	0.3	2.4
Medication containing hormones	0.2	3.5
Others	0.4	17.8
Total	100	100

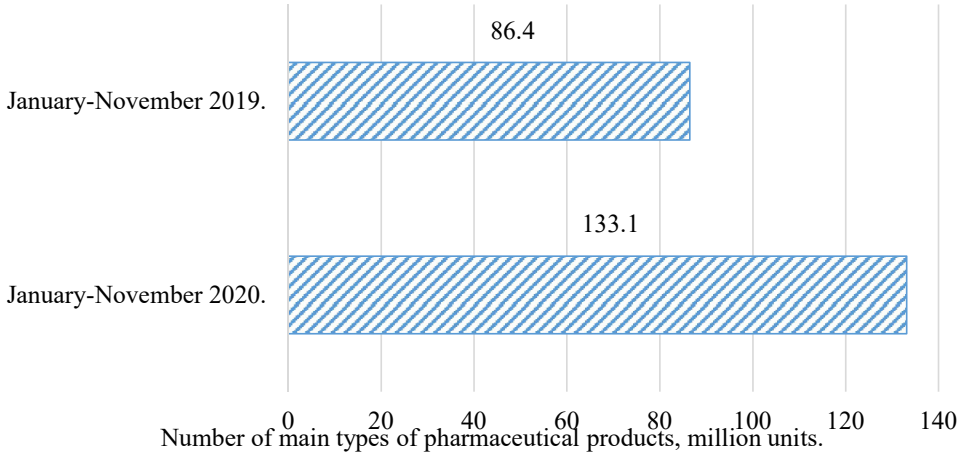

Fig. 3. The volume of production of the main types of pharmaceutical products used in medicine (million units)

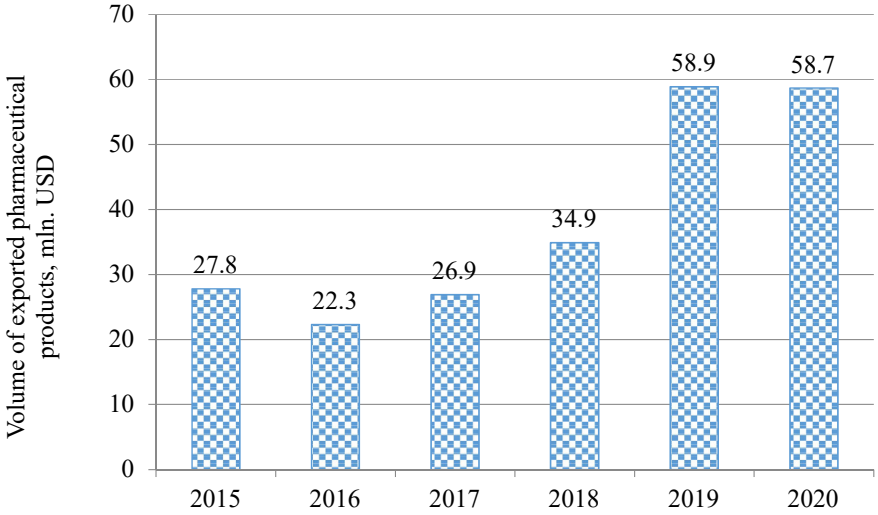

Fig. 4. Dynamics of exports of pharmaceutical products, mln. USD

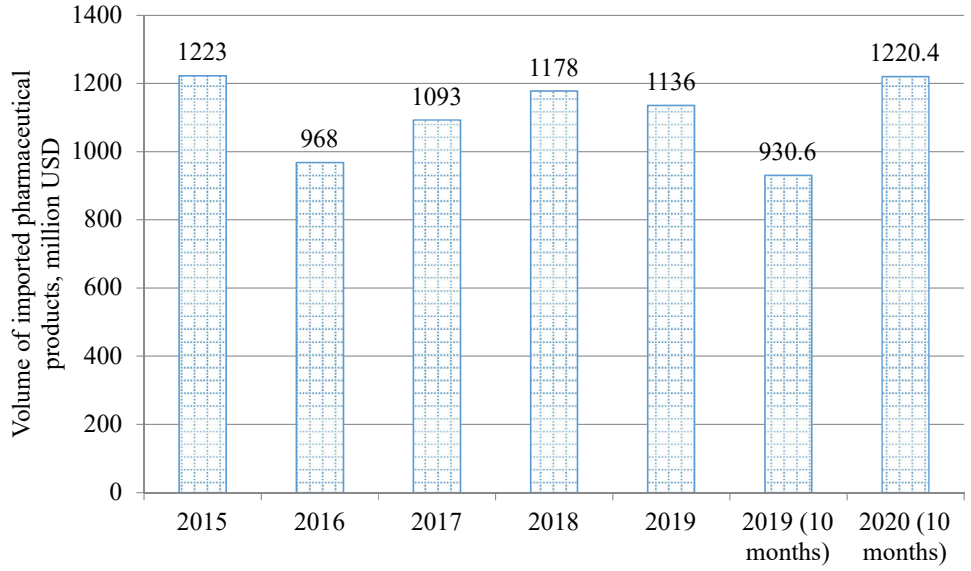

Fig. 5. Dynamics of imports of pharmaceutical products in the Republic of Kazakhstan, million USD

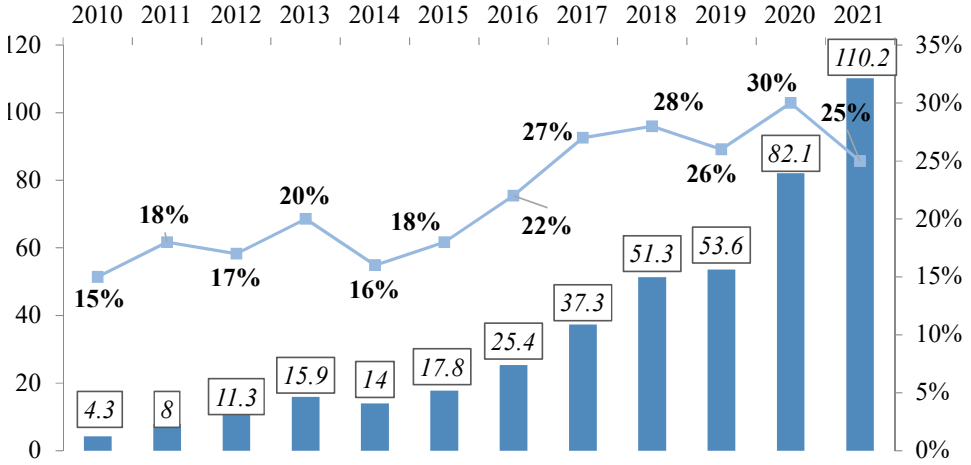

Fig. 6. Dynamics of purchases of a single distributor from domestic producers for 2010-2021, million tenge

By the end of 2021, purchases of medication and medical devices based on long-term contracts with domestic producers amount to 79.7 billion tenges (88 %) (Fig. 7). It is obvious that the increase in the volume of domestic pharmaceutical production makes it possible to more quickly and efficiently provide the necessary medication to the domestic market of the state at more affordable prices.

At the end of 2021, the combined share of the top ten distributors was 26 %, and the share of the top ten manufacturers was 50 % of the total purchases of SK-Pharmacy LLP (Table 4).

According to the results of purchases, the 1st place by the size of the share in the total volume was held by domestic products, and the 2nd place was by German products. The share of the countries in the top 10, according to the results of purchases, was 85 % of the total volume (Table 5).

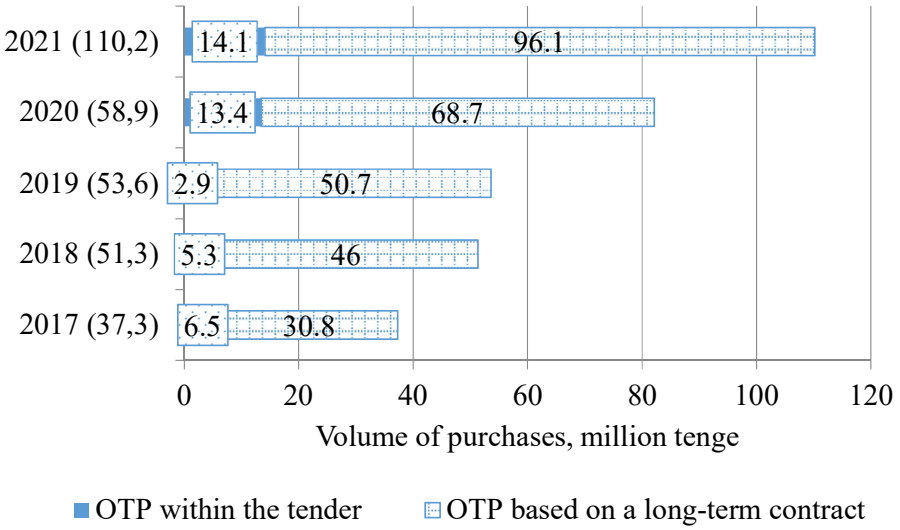

Fig. 7. Dynamics of purchases of a single distributor from domestic producers on the basis of a long-term contract for 2017–2021, million tenge

Table 4

Top-10 largest pharmaceutical manufacturers present in the market of the Republic of Kazakhstan

No.	Manufacturer	2020, million tenge.	2021, million tenge.	Growth by 2020, %	Share, %
1	KFK LLP, Kazakhstan	7501.20	71342.56	851	16
2	Pfizer	13595.71	33219.70	144	8
3	JSC Nobel, Kazakhstan	16660.17	19791.25	19	5
4	Sanofi	19134.99	19578.53	2	4
5	JSC «CHFM», Kazakhstan	19993.45	18528.15	–7	4
6	Beijing Institute of Biological Product Co, Ltd, China	–	15468.39	–	4
7	Roche	5545.61	10404.80	88	2
8	Glaxo	8462.85	10316.59	22	2
9	Vetter Pharma-Fertigung GmbH & Co. KG	8327.78	10205.48	23	2
10	Baxter	11197.02	9875.80	–12	2
Top 10			218731.27		50
Total			438878.41		100

Table 5

Top 10 countries involved in procurement

No.	Countries	2020, mln. tg.	2021 mln. tg.	Growth by 2020, %	Share, %
1	Kazakhstan	82063.36	178876.93	118	41
2	Germany	34320.92	41584.43	21	9
3	China	5251.09	26545.91	406	6
4	Belgium	4162.15	23769.53	471	5
5	Switzerland	16853.48	21902.14	30	5
6	France	20209.83	21288.80	5	5
7	Ireland	15526.74	16986.45	9	4
8	Italy	12195.99	15381.84	26	4
9	USA	11177.53	14406.53	29	3
10	India	10936.10	11130.96	2	3
Top 10			371873.54	–	85
Total			438876.41	–	–

By the end of 2021, the combined share of the ten most popular medications amounted to 11 % of the total volume shipped by SK-Pharmacy LLP to medical organisations in the region at both in-patient and outpatient levels. The first three places in terms of the share in the total volume of purchases by medical organisations were for a vaccine against coronavirus infection.

Further, to identify the conditions for the development of the pharmaceutical industry of the Republic of Kazakhstan, we assessed its potential and capabilities based on an online questionnaire (Table 6) using the SWOT analysis methodology [24]. 153 pharmacy professionals took part in the survey. The correlation coefficient is 0.834 (>0.75), and the Pearson coefficient is higher than the tabular one, which indicates a high convergence of expert opinions. The questionnaire consisted of 11 questions, 4 questions of which related to the assessment of environmental factors of SWOT analysis.

As a result of processing the socio-demographic block of the questionnaire, we compiled a «portrait of the respondent» (Fig. 8); it turned out that out of 153 respondents, 114 were female. So, we found that the respondent was a predominantly female pharmacist (74.5 %).

Next, the age of the respondents was analysed, and it was found that the respondents were pharmacy professionals between the ages of 20–25, 26–35, and 36–55; 52.3 % of respondents were between the ages of 36–55 (Fig. 9).

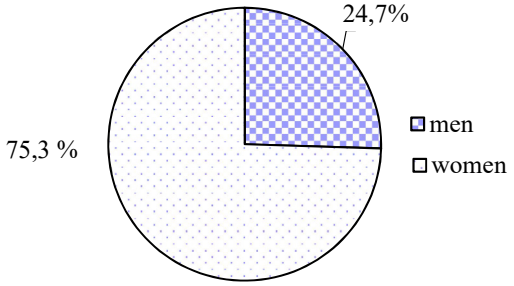

Fig. 8. Distribution of respondents by gender

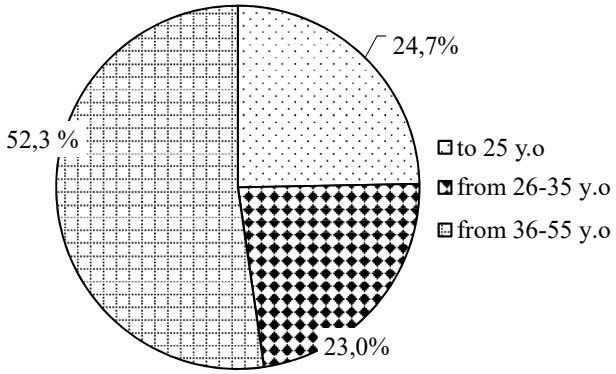

Fig. 9. Distribution of respondents by age

Statistical processing of the data showed that pharmaceutical organisations mostly employ mature individuals (32.3 %) with 26–30 years of experience (Fig. 10).

Thus, as a result of the survey, we found that the respondents are female pharmacists (74.5 %) aged 36 to 55 years (52.3 %), with work experience – 26–30 years (32.3 %).

Considering the above, it is most likely that the respondents have the necessary professional knowledge and skills in the field of formation of competitive advantages in the field of circulation of medicines.

Next, we evaluated the environmental factors of SWOT analysis. Each factor (S – Internal Strengths, W – Internal weaknesses, O – External Opportunities, and T – External threats) was evaluated, taking into account its significance *R* – assessment (*A*) its importance (*I*) to identify the conditions for the development of the pharmaceutical industry of the Republic of Kazakhstan, its specific features and future prospects (calculated as *A*I*/100), taking into account the certainty of this assessment (i.e. the likelihood that it is erroneous). At the same time, respondents assigned each of the factors (S, W, O, and T) points on a scale from 0 to 5 according to the significance of the manifestation and degree of influence of factors, as well as the probability of achievement. The largest number of the indicated scores of respondents was selected for calculations (Table 6).

The results indicated in the main block of the questionnaire of a direct expert survey (questionnaire) showed that the majority of respondents when determining the internal strengths (*S*) of the pharmaceutical industry of the Republic of Kazakhstan, note the readiness of the pharmaceutical industry for modernisation and state support (47 % of respondents assigned 5 points), political stability of the country (44 % of respondents assigned 5 points). Among internal weaknesses (*W*), the most important for respondents is the insignificant capacity of the pharmaceutical market, a limited range of domestic pharmaceutical products (55.5 % of respondents assigned 5 points) and the lack of domestic production of substances and original drugs (50.9 % of respondents assigned 5 points). At the same time, external opportunities (*O*), such as the active investment policy of Kazakhstan (62.7 % of respondents assigned 5 points), the expansion of digital and remote channels (25.4 % of respondents assigned 5 points) are more important for respondents, taking into account such external threats (T) as the import dependence of Kazakhstan (69.9 % of respondents assigned 5 points) and high volatility of the tenge against other currencies (24.1 % of respondents assigned 5 points).

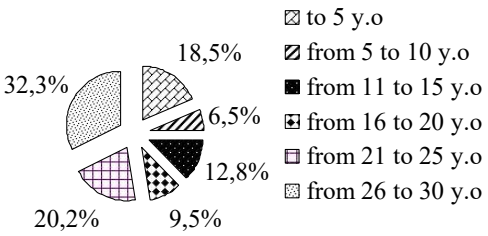

Fig. 10. Distribution of respondents based on work experience

Table 6

Strategic matrix of SWOT analysis of the pharmaceutical industry of the Republic of Kazakhstan

Internal Strengths (*S*)	Number of respondents in relation to points					A	R
	1	2	3	4	5		
1	2	3	4	**5**	6	7	8
*S*1: positive World Bank rating (easiness of doing business) and increased consumption of medications in both the retail and budget sectors of the medication supply	45	33	5	**57**	13	4	0.2
*S*2: foreign investments in the production of medications	23	27	**38**	32	33	3	0.15
*S*3: availability of scientific and educational training base	32	37	**53**	19	12	3	0.15
*S*4: creation of a pharmaceutical cluster in different regions of the country	2	10	18	**67**	56	4	0.2
*S*5: readiness of the pharmaceutical industry for modernisation and state support for the development of domestic production by means of procurement of medications within the framework of the state volume of free medical care (GOBMP) from domestic pharmaceutical manufacturers	10	12	24	35	**72**	5	0.25
*S*6: political stability, geostrategic location of Kazakhstan	2	16	15	52	**68**	5	0.25
*S*7: improvement of drug quality control	18	11	**55**	52	17	3	0.15
U=1.35							
Internal weaknesses (*W*)	Number of respondents in relation to points					A	R
	1	2	3	4	5		
*W*1: Insignificant capacity of the pharmaceutical market and limited range of pharmaceutical products manufactured by domestic producers	3	7	9	49	**85**	5	0.25
*W*2: Low level of research, educational capacity for the development of innovative medications, as well as insufficient funding for pharmaceutical development	3	12	53	**57**	28	4	0.2
*W*3: Small volume of exports of domestic pharmaceutical products, insufficient level of protectionism in relation to domestic pharmaceutical manufacturers	1	38	42	**45**	27	4	0.2
*W*4: Staffing shortages and lack of qualified pharmaceutical personnel	0	13	**62**	58	20	3	0.15
*W*5: Lack of domestic production of substances and original drugs	0	4	8	63	**78**	5	0.25
*W*6: Lack of interaction between the scientific community of Kazakhstan and manufacturers, lack of modern technology	11	13	42	**54**	33	4	0.2
*W*7: Priority of generic drugs in the retail network	31	38	**47**	37	0	3	0.15
U=1.35							

Continuation of Table 6

1	2	3	4	5	6	7	8
External Opportunities (*O*)	Number of respondents in relation to points					A	R
	1	2	3	4	5		
*O*1: Creation of innovative medications in special technoparks	0	67	**71**	6	9	3	0.15
*O*2: Expansion of the external pharmaceutical market, the formation of a single pharmaceutical market in the EAEU	1	40	17	**54**	41	4	0.2
*O*3: Active investment policy of Kazakhstan	0	0	8	49	**96**	5	0.25
*O*4: Expansion of the range of pharmaceutical products manufactured by domestic manufacturers	9	25	**44**	39	36	3	0.15
*O*5: Technological transfer of production of new medications and creation of new production of generics	20	16	51	**59**	7	4	0.2
*O*6: Expansion of digital and remote channels (e-commerce, telemedicine, remote promotion, etc.)	14	36	30	34	**39**	5	0.25
*O*7: Increasing domestic production capacity	13	25	**43**	38	34	3	0.15
U=1.4							
External threats (*T*)	Number of respondents in relation to points					A	R
	1	2	3	4	5		
*T*1: Import dependence of Kazakhstan	1	0	15	30	**107**	5	0.25
*T*2: Rapid development of the global pharmaceutical market	44	19	**49**	14	27	3	0.15
*T*3: Sharp rise in prices of imported medications and substances	4	7	38	**63**	41	4	0.2
*T*4: High competition with foreign pharmaceutical manufacturers	2	4	41	**59**	48	4	0.2
*T*5: Introduction of new modern facilities in CIS countries for the purpose of import substitution of medications	7	40	**58**	48	0	3	0.15
*T*6: Disruption of pharmaceutical supply chains as a result of the global epidemiological situation	0	6	17	**69**	61	4	0.2
*T*7: High volatility of the tenge against other currencies	22	35	30	29	**37**	5	0.25
U=1.4							

For each of the fields of the SWOT matrix, the arithmetic means score U was calculated. The introduction of these assessments allows, besides other things, to display on diagrams the significance of strengths, weaknesses, opportunities, and threats, compare them with each other, and visually assess the attractiveness of the pharmaceutical industry of the Republic of Kazakhstan (Fig. 11.).

Thus, based on the results of the SWOT analysis, it can be stated that the weaknesses and external threats of the pharmaceutical industry of the Republic of Kazakhstan slightly prevail over the strengths and external opportunities. This makes it possible to form the objectives and main directions for the implementation of short-, medium- and long-term strategies for the development of the domestic pharmaceutical industry. Negative features of the pharmaceutical market of Kazakhstan are the devaluation of the national currency; an increase in prices for pharmaceutical products, which, in turn, leads to a decrease in the purchasing power of the population and a shift in demand in favour of cheap generic medicines; an increase in the cost of the drug component of treatment associated with the appearance of expensive innovative drugs for the diagnosis, treatment and prevention of common diseases; lack of monitoring of the effectiveness of the use of medications.

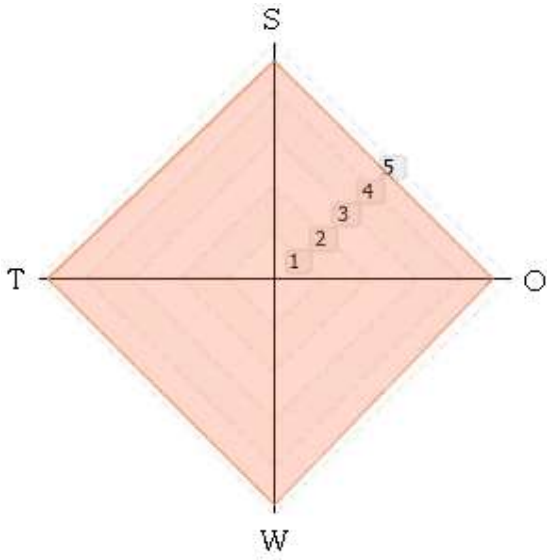

Fig. 11. The results of assessing the attractiveness of the pharmaceutical market of the Republic of Kazakhstan, taking into account the comparison of the significance of strengths, weaknesses, opportunities and threats

5. Discussion

At the present stage of development, the Kazakh pharmaceutical market is a highly profitable and rapidly developing sector of the country's national economy,

which is extremely dependent on imported products, such as medicines from specific substances or mixtures of substances, human blood and medicines consisting of antibiotics. But at the same time, the Kazakh pharmaceutical industry has all the prerequisites, especially a large plant material reserve of medicinal plants, for the production of domestic medicines. At the same time, to support the domestic pharmaceutical industry, the state annually increases the volume of domestic products in public procurement within the guaranteed volume of free medical care, investments in the fixed capital of pharmaceutical production, and also enters into long-term contracts with domestic producers and contract production customers for 10 years. In 2021, the volume of purchases of pharmaceutical products from Karaganda Pharmaceutical Complex LLP and Pfizer has increased dramatically. It is due to the COVID pandemic. Regarding the export of domestic products it is mainly sold near abroad, such as medicines from specific substances or mixtures of substances, veterinary vaccines, and medicines consisting of antibiotics. The SWOT analysis showed that weaknesses prevail over strengths, and respondents with professional knowledge and skills in forming competitive advantages in the field of circulation of medicines indicate the need to regulate the tenge exchange rate in relation to other currencies to coordinate prices when purchasing expensive innovative drugs for the diagnosis, treatment, and prevention of common diseases, which may lead to a shift in demand in favour of cheap generic medicines. If we compare the SWOT analysis of other countries, for example, Ukraine [25], we can see that in this country, the strengths associated with a powerful pharmaceutical industry are more dominant, and the threat characterising the lack of capacities for the production of medicines to expand the range of medicines due to domestic production. In the pharmaceutical industry in Iran, one of the main weaknesses is the lack of international standards in the production of drugs [26]. The weaknesses of India's pharmaceutical industry are the weak comprehensive infrastructure in several districts and the presence of more unorganised players in the field of food and nutraceuticals, which compromises quality, which leads to an increasingly competitive environment, and creates fierce price competition [27]. The main problems of the countries of the Eurasian Economic Union are still considered to be low export potential and dependence on imports of raw materials and packaging materials [28].

Research limitations. The SWOT analysis of the pharmaceutical industry of the Republic of Kazakhstan in the article belongs to the group of so-called instructive and descriptive models of strategic analysis, which show only general goals and specific measures that must be developed separately to achieve them. There may be difficulties when used in the monitoring process since the results of this unformalised method are presented in the form of a qualitative description.

Prospects for further research. Statistical information on the pharmaceutical market of the Republic of Kazakhstan and the results of the SWOT analysis in the article are promising to be used in various pharmaceutical and scientific research. It will contribute to the implementation of the comprehensive plan for the development of the pharmaceutical and medical industry of the Republic of Kazakhstan for 2020-2025.

6. Conclusions

Thus, the conducted research showed the growth of the Kazakhstani pharmaceutical market in retail turnover by 10.4 %. As we have found out, in 2020, 7449 types of medicines and 9154 medical products were registered, of which the share of domestic production is 13.1 % (i.e., 978 drugs) and 10 % (i.e., 916 medical products). The main share in the structure of public procurement was the provision of medicines on an outpatient basis, while the purchase of a single distributor of SK-Pharmacy LLP from domestic manufacturers has increased by 105.9 million tenges since 2010. When comparing the data with 2015, we determined that the volume of pharmaceutical production in Kazakhstan increased by 1.4 times due to the location of pharmaceutical plants in the cities of Shymkent (39.2 %) and Almaty (20.6 %), as well as in the Almaty region (23 %). We also found that the import of pharmaceutical products to the Republic of Kazakhstan is more than 20.7 times higher than the export of domestic pharmaceutical products, which are mainly sent to Russia (76.5 % of total exports). To identify the conditions, the conducted online survey using the SWOT analysis method showed that the respondents were female pharmacists (74.5 %), aged 36 to 55 years old (52.3 %), and work experience – 26–30 years (32.3 %). Based on the results of the survey and the conducted SWOT analysis with the compilation of a strategic matrix, we determined that the weaknesses and external threats of the pharmaceutical industry of the Republic of Kazakhstan. However, slightly, prevail over the strengths and external opportunities. We have found that for the further development of the pharmaceutical industry of the Republic of Kazakhstan, considering its import dependence, additional funding for research and educational activities to develop innovative medicines and substances is necessary. This makes it possible to form the goal and main directions for the implementation of short-, medium- and long-term strategies for the development of the domestic pharmaceutical industry, which are necessary to prevent the devaluation of the national currency, as a result of which prices for pharmaceutical products may rise, which, in turn, will lead to a decrease in the purchasing power of the population and a shift in demand in favour of cheap generic medicines. This process can also affect the increase in the cost of the drug component of treatment associated with the emergence of expensive innovative drugs for the diagnosis, treatment and prevention of common diseases.

Conflict of interest

The authors declare that they have no conflict of interest in connection with this research, whether financial, personal, authorial or otherwise, which could affect the research and its results presented in this article.

Funding

The research was supported by an internal university scholarship of the Asfendiyarov Kazakh National Medical University, «Development of a conceptual project for the production of a therapeutic and prophylactic product based on Morus Alba L. fruits», approved by the Rector's Order No. 312 dated 06/18/2021 «On the allocation of an internal university scholarship for scientific research in the field of medicine and healthcare».

Data availability

The data will be made available on reasonable request.

Acknowledgements

The authors would like to thank the Kazakhstan Industry and Export Center «QazIndustry», the «PharmReview» company, as well as the Limited Liability Partnership «SK-Pharmacy» for the information they provided and their support in this work.

References

1. Korzh, I., Olieinikova, N., Beketova, M., Kubarieva, I., Korobova, Y., Sevriukov, O., Afanasenko, O. (2022). Comparative analysis of drug consumption for the treatment of epilepsy in Ukraine, Kazakhstan and Belarus. ScienceRise: Pharmaceutical Science, 2 (36), 26–36. doi: https://doi.org/10.15587/2519-4852.2022.255840

2. Almurzayeva, A., Zhakipbekov, K., Ashirov, M. (2022). Competitiveness of the pharmaceutical industry of Kazakhstan. European Journal of Clinical Pharmacology, 78 (1), S87–S87.

3. Tereshchenko, L., Zhirova, I. (2019). Analysis of the dynamics of expenditures on pharmaceutical support of population in Ukraine, Belarus republic and in European Union. ScienceRise: Pharmaceutical Science, 4 (20), 10–14. doi: https://doi.org/10.15587/2519-4852.2019.177193

4. Datkhayev, U., Shopabaeva, A., Zhakipbekov, K., Shertaeva, C., Umurzakhova, G., Sultanbekov, A. et al. (2016). Determination of seasonal demand for pharmaceutical staff. International Journal of Pharmaceutical Sciences Review and Research, 36 (2), 105–111. Available at: https://globalresearchonline.net/journalcontents/v36-2/18.pdf

5. Umurzakhova, G., Zhakipbekov, K., Sultanbekov, A., Tulemissov, S., Dilbarkhanov, B., Sapakbay, M., Datkhayev, U. (2017). Analyzing the Ways to Improve Personnel Management in the Pharmaceutical Industry of Kazakhstan. Journal of Global Pharma Technology, 9 (11), 223–237.

6. Zhakipbekov, K., Umurzakhova, G., Sultanbekov, A., Issatayeva, N., Shopabaeva, A., Shertaeva, C., Datkhayev, U. (2018). Communication skills as one of the main competences of pharmacists. Annals of Tropical Medicine and Public Health, 11 (3), 62. https://doi.org/10.4103/atmph.atmph_194_17

7. Serikbayeva, E. A., Zhakipbekov, K. S., Umurzakhova, G. Zh., Datkhayev, U. M., Kauypova, F. E., Dyusembinova, G. A. (2020). Methods of Assessing the Possibility of Forming a Branch Regional Clusters in RK. Systematic Reviews in Pharmacy, 11 (6), 425–434. Available at: https://www.sysrevpharm.org/articles/methods-of-assessing-the-possibility-of-forming-a-branch-regional-clusters-in-rk.pdf

8. Shertaeva, C., Tulemissov, S., Botabayeva, R., Blinova, O., Mamytbayeva, K., Zhanabayev, N., Ibragimov, G., Datkhayev, U., Zhakipbekov, K. (2014). Improvement of medicine provision of patients with a chronic obstructive lung illness on the basis of pharmaceutical and economical investigations. Life Science Journal, 11 (9s), 16–23.

9. Li, Z., Li, X. (2021). Will Innovation of Pharmaceutical Manufacturing Improve Perceived Health? Frontiers in Public Health, 9. doi: https://doi.org/10.3389/fpubh.2021.647357

10. Datkhayev, U. M., Sakipova, Z. B., Ustenova, G. O., Zhakipbekov, K. S., Kozhanova, K. K., Kapsalyamova, E. N. et al. (2019). Validation of Spectrophotometric Method for Determination of Thiamazole in Liquids by Dissolution Test for the Transdermal Form. Pharmaceutical Chemistry Journal, 53 (6), 572–576. doi: https://doi.org/10.1007/s11094-019-02039-3

11. Ashirov, M. Z., Datkhayev, U. M., Myrzakozha, D. A., Sato, H., Zhakipbekov, K. S., Rakhymbayev, N. A., Sadykov, B. N. (2020). Study of Cold-Pressed Tobacco Seed Oil Properties by Gas Chromatography Method. The Scientific World Journal, 2020, 1–5. doi: https://doi.org/10.1155/2020/8852724

12. Turgumbayeva, A., Ustenova, G., Datkhayev, U., Rahimov, K., Abramavicius, S., Tunaityte, A. et al. (2020). Safflower (Carthamus Tinctorius L.) a Potential Source of Drugs against Cryptococcal Infections, Malaria and Leishmaniasis. Phyton, 89 (1), 137–146. doi: https://doi.org/10.32604/phyton.2020.07665

13. Tleubayeva, M. I., Abdullabekova, R. M., Datkhayev, U. M., Ishmuratova, M. Yu., Alimzhanova, M. B., Kozhanova, K. K. et al. (2022). Investigation of CO2 Extract of Portulaca oleracea for Antioxidant Activity from Raw Material Cultivated in Kazakhstan. International Journal of Biomaterials, 2022, 1–11. doi: https://doi.org/10.1155/2022/6478977

14. Turgumbayeva, A., Tileuberdi, N., Zhakipbekov, K., Tulemissov, S., Umurzakhova, G., Utegenova, G. (2021). Antimicrobial efficacies of Brassica Napus L. essential oils/ nanoparticles composites. Journal of Nanostructures, 11 (3), 524–533. doi: https://doi.org/10.22052/JNS.2021.03.010

15. Turgumbayeva, A., Zhakipbekov, K., Shimirova, Z., Akhelova, S., Amirkhanova, A., Koilybayeva, M. et al. (2022). Study of phytochemical compounds of Plantago major leaves grown in Kazakhstan. Pharmacia, 69 (4), 1019–1026. doi: https://doi.org/10.3897/pharmacia.69.e96526

16. Akhmetov, S. M. (Ed.) (2014). Tekhnicheskie i sotcialno-ekonomicheskie problemy: effektivnye puti ikh resheniia. Novosibirsk: SibAK Publishing House, 198.

17. Besperebоinoe obespechenie LS i MI v postpandemicheskii period: godovoi otchet TOO «SK-Farmatciia» za 2021 god (2022). Nur-Sultan: SK-Pharmacy LLP, 44. Available at: https://sk-pharmacy.kz/rus/about/otchetnost

18. Itogi farmatcevticheskogo rynka GLS za 2020 god (2021). Kazakhstanskii Farmatcevticheskii Vestnik, 4 (603). Available at: https://pharmnewskz.com/ru/analytic/itogi-farmacevticheskogo-rynka-gls-za-2020-god_17876

19. On Public Health and Healthcare system (2020). Code of the Republic of Kazakhstan No. 360-VI. 07.07.2020 ZRK. Available at: https://adilet.zan.kz/kaz/docs/K2000000360

20. Farmpromyshlennost RK: obemy, potrebnosti i obespechennost (2021). Available at: https://qazindustry.gov.kz/ru/article/1986-rynok-farmatsevticheskoy-produktsii-i-otechestvennykh-lekarstvennykh-preparatov Last accessed: 12.03.2021

21. Rynok farmatcevticheskoi produktcii i otechestvennykh lekarstvennykh preparatov (2021). Available at: https://qazindustry.gov.kz/ru/article/1986-rynok-farmatsevticheskoy-produktsii-i-otechestvennykh-lekarstvennykh-preparatov Last accessed: 08.10.2021

22. Sozdavaia ravnuiu i svoevremennuiu dostupnost LS i MI v uvtoviiakh pandemii (2020). Otchet tovarishchestva s ogranichennoi otvetstvennostiu «SK-FARMATcIIa» po itogam 2020 goda. https://sk-pharmacy.kz/files4/%D0%9D%D0%B0%D1%80%D0%BE%D0%B4%D0%BD%D1%8B%D0%B9%20%D0%BA%D0%BE%D0%BD%D1%82%D1%80%D0%BE%D0%BB%D1%8C/%D0%93%D0%BE%D0%B4%D0%BE%D0%B2%D0%BE%D0%B9%20%D0%BE%D1%82%D1%87%D0%B5%D1%82%20%D0%95%D0%94%20%D0%B7%D0%B0%202020%20%D0%B3%D0%BE%D0%B4.pdf Last accessed: 15.07.2022.

23. Podderzhka otechestvennykh proizvoditelei. Available at: https://sk-pharmacy.kz/rus/sotrudnichestvo/podderzhka_otech_proizvoditele/ Last accessed: 15.07.2022

24. Arutyunova, D. V. (2010). Strategicheskii menedzhment. Taganrog: Izd-vo TTI IuFU, 122. Available at: http://www.aup.ru/books/m205/

25. Moroz, S., Sahaidak-Nikitiuk, R., Zoidze, D. (2019). Implementation of the Quantitative SWOT Analysis Method in the Research on the Contemporary State and Prospects of Consistent Development of the Pharmaceutical Branch. Research Journal of Pharmacy and Technology, 12 (11), 5199–5205. doi: https://doi.org/10.5958/0974-360x.2019.00900.4

26. Mamedyarov, Z. (2018). Pharmaceutical sector in Iran: current status and prospecs. World Economy and International Relations, 62 (7), 57–62. doi: https://doi.org/10.20542/0131-2227-2018-62-7-57-62

27. Tare, S., Bageria, S. (2019). SWOT analysis of indian pharmaceutical industry: in referance to indian sme pharma industry approchestowards competitive advantage. International Journal of Innovation in Engineering Research & Management, 6 (1).

28. Tashenov, A., Cherednichenko, N. (2013). Development Prospects for the Pharmaceutical Market of the Single Economic Space. Eurasian Development Bank, Sector Report No. 18. Available at: https://ssrn.com/abstract=4109101

Received date 17.01.2023
Accepted date 24.04.2023
Published date 30.04.2023

Kairat Zhakipbekov, PhD, Associate Professor, School of Pharmacy, S. D. Asfendiyarov Kazakh National Medical University, Tolebi str., 94, Almaty, Kazakhstan, 050000

Olga Posylkina, Doctor of Pharmaceutical Sciences, Professor, Department of Management and Quality Assurance in Pharmacy, National University of Pharmacy, Pushkinska str., 53, Kharkiv, Ukraine, 61002

Narbek Zhumabayev, Candidate of Pharmaceutical Sciences, Docent, School of Pharmacy, South Kazakhstan Medical Academy, Al-Farabi sq., 1, Shymkent, Kazakhstan, 160019

Ubaidilla Datkhayev, Doctor of Pharmaceutical Sciences, Professor, School of Pharmacy, S. D. Asfendiyarov Kazakh National Medical University, Tolebi str., 94, Almaty, Kazakhstan, 050000

Nurdaulet Zhumabayev*, School of Pharmacy, S. D. Asfendiyarov Kazakh National Medical University, Tolebi str., 94, Almaty, Kazakhstan, 050000

Almira Almurzaeva, School of Pharmacy, S. D. Asfendiyarov Kazakh National Medical University, Tolebi str., 94, Almaty, Kazakhstan, 050000

Arailym Mukanova, School of Pharmacy, S. D. Asfendiyarov Kazakh National Medical University, Tolebi str., 94, Almaty, Kazakhstan, 050000

***Corresponding author:** Nurdaulet Zhumabayev, e-mail: nurdaulet_phd@mail.ru*