

Received: 01 August 2023 / Accepted: 07 October 2023 / Published online: 31 October 2023

DOI 10.34689/SH.2023.25.5.019

UDC 614.27

STUDY OF DRUG PROVISION OF THE ADULT POPULATION AT THE LEVEL OF PRIMARY HEALTH CARE: THROUGH THE PRISMA OF CONSUMERS

Adilet A. Nazarbayev¹, <https://orcid.org/0009-0006-0580-2792>

Ardak N. Nurbakhyt¹, <https://orcid.org/0000-0002-4854-6809>

Anuar D. Akhmetzhan¹, <https://orcid.org/0009-0009-7451-9706>

Aziza M. Imamatinova¹, <https://orcid.org/0000-0003-2233-4522>

¹ Asfendiyarov Kazakh National Medical University, Almaty, Republic of Kazakhstan.

Abstract

Introduction Globally, medicine provision is a priority area in healthcare system and it is noted that annually there is an increase of the cost. The main reason is demographic changes and increased therapeutic costs; accordingly, effective drug provision allows solving systemic issues related to public health.

The aim. To study the experience of the adult population with the state of drug supply at the primary health care level.

Materials and methods: A prospective study was conducted during 2022-2023. Based on literary sources, a questionnaire was developed that included 30 questions. A total 787 respondents participated in survey. Survey provided in urban and rural area. Data analysis was carried out using SPSS 13 program.

Results: A larger number of women, as well as city residents, took part in the survey. Urban residents spend higher amount of money for medicine monthly in comparison to rural respondents. Moreover, low or satisfactory condition of their health indicated 34,5% with inattention to their health; 26,5% found it difficult to answer. In rural areas there is a delay in the supply of medicines compared to urban areas. Overall, respondents are satisfied with the provision of information from doctors or pharmacists about medicines

Conclusion: There are additional costs for the purchase of medicines, and residents living in villages are more often faced with the situation of untimely delivery of medicines. Overall, there is a positive response to the work of the doctor or pharmacist in providing information about medicines.

Keywords: primary healthcare, medicine prescription, quality of service, Kazakhstan.

Аннотация

ИЗУЧЕНИЕ ЛЕКАРСТВЕННОГО ОБЕСПЕЧЕНИЯ ВЗРОСЛОГО НАСЕЛЕНИЯ НА УРОВНЕ ПЕРВИЧНОЙ МЕДИКО- САНИТАРНОЙ ПОМОЩИ: ЧЕРЕЗ ПРИЗМУ ПОТРЕБИТЕЛЕЙ

Адилет А. Назарбаев¹, <https://orcid.org/0009-0006-0580-2792>

Ардак Н. Нурбакыт¹, <https://orcid.org/0000-0002-4854-6809>

Ануар Д. Ахметжан¹, <https://orcid.org/0009-0009-7451-9706>

Азиза М. Имаматдинова¹, <https://orcid.org/0000-0003-2233-4522>

¹ НАО «Казакский национальный медицинский университет имени С. Д. Асфендиярова», г. Алматы, Республика Казахстан.

Введение. Глобально, лекарственное обеспечение является приоритетным направлением в системе здравоохранения и отмечается, что ежегодно наблюдается рост его стоимости. Основная причина связано с демографическими изменениями и рост затрат на лечение; соответственно, эффективное лекарственное обеспечение позволяет решать системные вопросы, связанные со здравоохранением.

Цель. Изучение опыта взрослого населения о состоянии лекарственного обеспечения на уровне первичной медико-санитарной помощи.

Материалы и методы. Проспективное исследование было проведено в 2022-2023 гг. На основе литературных источников была разработана анкета, включающая 30 вопросов. Всего в опросе приняли участие 787 респондентов. Опрос проведен в городской и сельской местности. Анализ данных проводился с помощью программы SPSS 13.

Результаты. В опросе приняло участие большее количество женщин, а также жителей города. Городские жители ежемесячно тратят на лекарства большую сумму денег в сравнении с сельскими жителями. При этом на плохое или удовлетворительное состояние своего здоровья указали 34,5%, которое связывают с невнимательным отношением к своему здоровью; 26,5% затруднились ответить. В сельской местности наблюдается задержка с поставками

лекарств по сравнению с городской местностью. В целом респонденты удовлетворены предоставлением информации о лекарствах от врачей или фармацевтов.

Вывод. При приобретении лекарств возникают дополнительные затраты, а жители, проживающие в селах, чаще сталкиваются с ситуацией несвоевременной доставки лекарств. В целом наблюдается положительный отклик на работу врача или фармацевта по предоставлению информации о лекарственных средствах.

Ключевые слова: первичная медико-санитарная помощь, назначение лекарств, качество обслуживания, Казахстан.

Түйіндеме

АЛҒАШҚЫ МЕДИЦИНАЛЫҚ-САНИТАРЛЫҚ КӨМЕК ДЕҢГЕЙІНДЕ ЕРЕСЕК ТҰРҒЫНДАРДЫ ДӘРІ-ДӘРМЕКПЕН ҚАМТАМАСЫЗ ЕТУДІ ЗЕРТТЕУ: ТҰТЫНУШЫЛАР ОБЪЕКТИВІ АРҚЫЛЫ

Адилет А. Назарбаев¹, <https://orcid.org/0009-0006-0580-2792>

Ардак Н. Нурбакыт¹, <https://orcid.org/0000-0002-4854-6809>

Ануар Д. Ахметжан¹, <https://orcid.org/0009-0009-7451-9706>

Азиза М. Имаматдинова¹, <https://orcid.org/0000-0003-2233-4522>

¹ «С.Ж. Асфендияров атындағы Қазақ Ұлттық Медицина университеті» КЕАҚ, Алматы қ., Қазақстан Республикасы.

Кіріспе. Жаһандық деңгейде дәрі-дәрмекпен қамтамасыз ету денсаулық сақтау жүйесінде басым бағыт болып табылады және жыл сайын оның құнының өсуі байқалады. Негізгі себеп демографияға байланысты өзгерістер және емдеу шығындарының өсуі; тиісінше, тиімді дәрі-дәрмекпен қамтамасыз ету денсаулық сақтаумен байланысты жүйелі мәселелерді шешуге мүмкіндік береді.

Мақсаты алғашқы медициналық-санитарлық көмек деңгейінде дәрі-дәрмекпен қамтамасыз етудің жай-күйі туралы ересек халықтың тәжірибесін зерделеу.

Материалдар мен әдістері. Перспективалық зерттеу 2022-2023 жылдары жүргізілді. Әдеби дереккөздер негізінде 30 сұрақтан тұратын сауалнама жасалды. Сауалнамаға барлығы 787 респондент қатысты. Сауалнама қалалық және ауылдық жерлерде жүргізілді. Деректерді талдау SPSS 13 бағдарламасы арқылы жүргізілді.

Нәтижелер. Сауалнамаға әйелдер саны да, қала тұрғындары да көбірек қатысты. Қала тұрғындары ай сайын ауыл тұрғындарымен салыстырғанда дәрі-дәрмектерге көп ақша жұмсайды. Бұл ретте өз денсаулығының нашар немесе қанағаттанарлық жай-күйіне 34,5% көрсетілді, бұл оның денсаулығына немқұрайлы қараумен байланысты; 26,5% жауап беру қиынға соқты. Ауылдық жерлерде қалалық жерлермен салыстырғанда дәрі-дәрмекпен қамтамасыз етудің кешігуі байқалады. Жалпы, респонденттер дәрігерлердің немесе фармацевтердің дәрі-дәрмектер туралы ақпарат беруіне қанағаттанады.

Қорытынды. Дәрі - дәрмектерді сатып алу кезінде қосымша шығындар пайда болады, ал ауылдарда тұратын тұрғындар дәрі-дәрмектерді уақтылы жеткізбеу жағдайына жиі тап болады. Жалпы, дәрі-дәрмектер туралы ақпарат беруі жайында дәрігердің немесе фармацевттің жұмысына оң жауап бар.

Түйінді сөздер: алғашқы медициналық-санитарлық көмек, дәрі-дәрмек тағайындау, қызмет көрсету сапасы, Қазақстан.

Bibliographic citation:

Nazarbayev A.A., Nurbakhyt A.N., Akhmetzhan A.D., Imamatinova A.M. Study of drug provision of the adult population at the level of primary health care: through the prism of consumers // *Nauka i Zdravookhranenie* [Science & Healthcare]. 2023, (Vol.25) 5, pp. 144-150. doi 10.34689/SH.2023.25.5.019

Назарбаев А.А., Нурбакыт А.Н., Ахметжан А.Д., Имаматдинова А.М. Изучение лекарственного обеспечения взрослого населения на уровне первичной медико-санитарной помощи: через призму потребителей // *Наука и Здравоохранение*. 2023. 5(Т.25). С. 144-150. doi 10.34689/SH.2023.25.5.019

Назарбаев А.А., Нурбакыт А.Н., Ахметжан А.Д., Имаматдинова А.М. Алғашқы медициналық-санитарлық көмек деңгейінде ересек тұрғындарды дәрі-дәрмекпен қамтамасыз етуді зерттеу: тұтынушылар объективі арқылы // *Ғылым және Денсаулық сақтау*. 2023. 5 (Т.25). Б. 144-150. doi 10.34689/SH.2023.25.5.019

Introduction

Medicine provision is a priority issue and a strategic element of the healthcare system of any country in the world. Every year there is an increase in costs in the healthcare system, including the purchase of medicines. The increase in costs is associated with epidemiological and demographic changes and increased therapeutic costs; accordingly, effective drug provision allows solving systemic issues related to public health [3,20]. Among Organization

for Economic Co-operation and Development (OECD) countries, average per capita spending on pharmaceuticals has doubled in the last 20 years [14]. Currently, financing for medicines is a challenge for health systems, which depends on the high unit costs of some drugs or meeting the needs of the population.

Achieving universal health coverage focuses on providing accessible, equitable health care by strengthening the primary health care system. Thus, access to medicines

at the primary health care (PHC) level is an integral part of the provision of medical care, which helps prevent complications of the disease and maintain the health potential of the population [8]. Therefore, the provision of medicines at the primary health care level is a criterion for the formation of patient health and a criterion for the effectiveness of doctors in meeting the needs of patients for medical care[5]. The active involvement of pharmacists and doctors, as well as the population itself, in adhering to the timely use of medications and compliance with recommendations is necessary to achieve an effective therapeutic outcome. In Kazakhstan the analysis shows the increase in the list of medicines reimbursed from public funds in the last five years.

The purpose of our study is to study the experience of the adult population with the state of drug supply at the primary health care level.

Materials and methods

A prospective study was conducted during 2022-2023.

Based on literary sources, a questionnaire was developed that included 30 questions. The questions were mixed, where respondents could leave their comments. The survey included questions about population satisfaction with drug provision in PHC as well as their monthly expenditure for drug. The survey was conducted through a Google form and a paper version in PHC at the city and district level. A total 787 respondents participated in survey. Gender

distribution is not provided. Both genders are participating in the study. There were no restrictions on ethnicity, and therefore there were no restrictions on the possible grouping of participants based on race or nationality. Citizens of the Republic of Kazakhstan of different national and ethnic origins are participating in the study. Criteria for inclusion were voluntary consent to participate in the study; adult population aged 18-74 years living in Kazakhstan. Thus, the criteria for exclusion are disagreement to participate in a scientific study, as well as people recognized by law as legally incompetent, and other persons unable to give their consent on their own, were not included in the study. Data analysis was carried out using SPSS 13 program.

The study approved at local ethics committee of the Kazakh National Medical university (№18, February 6, 2023).

Results

Table 1 presents the demographic indicators of survey participants among urban and rural representatives. In both regions there were respondents aged 18 years and over 60 years. Both regions accepted the largest number of females. There is a higher rate of higher education among urban residents compared to residents of the rural region. The largest number of respondents are married and more than 40,0% of respondents have a salary in the range of 150000-200000 tenge.

Table 1.

Demographic characteristics of survey participants.

Characteristics of the questions		Urban N(%)	Rural N(%)	Total N(%)	p value
Age	18-29	176(26,0%)	31(27,9%)	207(26,3%)	0,073
	30-39	146(21,6%)	28(25,2%)	174(22,1%)	
	40-49	148(21,9%)	12(10,8%)	160(20,3%)	
	50-59	121(17,9%)	20(18,0%)	141(17,9%)	
	older 60	85(12,6%)	20(18,0%)	105(13,3%)	
Sex	male	269(39,8%)	31(27,9%)	300(38,1%)	0,017
	female	407(60,2%)	80(72,1%)	487(61,9%)	
Level of education	Average	39(5,8%)	10(9,0%)	49(6,2%)	<0,001
	College	184(27,3%)	53(47,7%)	237(30,2%)	
	Higher	45166,9	4843,2	49963,5	
Social status	Worker	396(58,6%)	55(50,9%)	451(57,5%)	0,074
	Housewife	60(8,9%)	14(13,0%)	74(9,4%)	
	Pensioner	86(12,7%)	21(19,4%)	107(13,6%)	
	Employee	62(9,2%)	13(12,0%)	75(9,6%)	
	Entrepreneur	30(4,4%)		30(3,8%)	
	Unemployed	15(2,2%)	3(2,8%)	18(2,3%)	
	Military person(s)	7(1,0%)		7(,9%)	
	Student (student)	20(3,0%)	2(1,9%)	22(2,8%)	
Family status	Never been married	165(25,2%)	24(22,6%)	189(24,8%)	0,88
	Married)	400(61,0%)	65(61,3%)	465(61,0%)	
	Widow (widower)	44(6,7%)	9(8,5%)	53(7,0%)	
	Divorced	47(7,2%)	8(7,5%)	55(7,2%)	
Financial situation	From 100,000 tenge to 150,000 tenge per month	235(36,2%)	56(51,4%)	291(38,3%)	0,002
	From 150,000 tenge to 200,000 tenge per month	291(44,8%)	44(40,4%)	335(44,1%)	
	From 200,000 tenge and above	124(19,1%)	9(8,3%)	133(17,5%)	

Higher number of the rural residents spend up to 5000 tenge on medicines, while in the city it is more than 5000 tenge per month. Nevertheless, 25,4% of respondents spend more than 10000 tenge per month on medicines in both regions. About a third of respondents noted a satisfactory condition of their health (30,3%), and a lower number indicated poor condition (4,2%), the figure prevails among urban residents. At the same time, 34,0% of respondents associate their poor condition of their health with inattention to their health; 26,5% found it difficult to answer. The lack of time for examination and treatment and the lack of financial resources for

prevention, diagnosis and treatment were noted by 12,7% and 10,7% of respondents, respectively. 70,0% are insured in the compulsory medical insurance system, while 19,5 in the guaranteed volume of free medical care category, 4,7 % had no idea about their insurance status. 42,2% of respondents were registered at the dispensary. Only 23,6% noted the regularity of taking medications and constant use was noted by 17.7% of respondents. And also 53,3% of respondents noted that they were entitled to medicines within the framework of the State Fund for Medical Care/Compulsory Medical Insurance (free of charge) Table 2.

Table 2.

Study of respondents' health status and health costs.

Characteristics of the questions		Urban	Rural	Total	p value
		N(%)	N(%)	N(%)	
Costs for health services	Up to 2500 tenge	139(21,5%)	31(29,2%)	170(22,6%)	0,02
	From 2500 to 5000 tenge	162(25,1%)	35(33,0%)	197(26,2%)	
	From 5000 to 10000 tenge	177(27,4%)	17(16,0%)	194(25,8%)	
	From 10,000 tenge and above	168(26,0%)	23(21,7%)	191(25,4%)	
Health assessment	Excellent	180(27,3%)	32(29,4%)	212(27,6%)	0,415
	good	245(37,1%)	47(43,1%)	292(38,0%)	
	Satisfactory	207(31,4%)	26(23,9%)	233(30,3%)	
	Bad	28(4,2%)	4(3,7%)	32(4,2%)	
If you think that your health is BAD, what is the reason for this?	With inattention to your health	178(34,3%)	34(37,8%)	208(34,0%)	0,301
	With a lack of financial resources for prevention, diagnosis and treatment	54(10,4%)	14(15,5%)	65(10,7%)	
	Low qualified medical personnel	22(4,2%)	6(6,7%)	28(4,1%)	
	With the distance of the clinic or hospital from the place of residence	45(8,7%)	5(5,6%)	46(7,8%)	
	With no time for examination and treatment	75(14,4%)	7(7,8%)	78(12,7%)	
	I find it difficult to answer/I can't assess the reason	142(27,2%)	22(24,4%)	162(26,5%)	
	Other	11(2,1%)	2(2,2%)	12(2,2%)	
Insurance status	I am insured in the OSMS system	468(71,3%)	66(61,7%)	534(70,0%)	0,05
	I belong to preferential categories of the population (GBP)	124(18,9%)	25(23,4%)	149(19,5%)	
	I have private/employer insurance	38(5,8%)	6(5,6%)	44(5,8%)	
	Don't know	26(4,0%)	10(9,3%)	36(4,7%)	
Dispensary registration	Yes	293(43,7%)	36(33,0%)	329(42,2%)	0,059
	No	332(49,6%)	61(56,0%)	393(50,4%)	
	Don't know	45(6,7%)	12(11,0%)	57(7,3%)	
Frequency of taking medication	of necessity	372(57,0%)	75(68,8%)	447(58,7%)	0,047
	regularly in courses (once every six months, once a year, etc.)	158(24,2%)	22(20,2%)	180(23,6%)	
	daily/constantly	123(18,8%)	12(11,0%)	135(17,7%)	
Are you entitled to medications under the State Fund for Medical Care/Compulsory Medical Insurance (free of charge)?	Yes	361(54,0%)	53(49,1%)	414(53,3%)	0,339
	No	264(39,5%)	44(40,7%)	308(39,6%)	
	Don't know	44(6,6%)	11(10,2%)	55(7,1%)	

72,7% of respondents receive medications on an outpatient basis, of which 44,3% receive 2-3 medications and 36,1% receive one type of drug. 62,0% of respondents note that they receive it on time, in particular, city residents 64,6% ($p = 0,002$). However, 11,3% receive their medications with a delay and 12,8% do not receive them on time, mostly rural residents. And also more than 51,4% in both regions note that they sometimes have to buy medicines, where the reason was due to untimely delivery 47,6%, while due to distance 41,3% ($p < 0,001$). More than half of the

respondents note that the pharmacist or doctor answers all my questions 68,5%, $p=0,01$ and treats me with respect 70,1%, $p=0,033$. The acceptability of the working hours of the pharmacy/medicine dispensing room was indicated by the largest number of respondents 72,1% $p < 0,001$. Pharmacists or a doctor explain the reason for prescribing the medicine 73,9%, $p < 0,001$; how, when and in what doses to take medications 68,8%, $p < 0,001$; what side effects may there be from taking the medicine 70,3%, $p < 0,001$; how to store medications 75,0%, $p < 0,001$ (Table 3).

Table 3.

Study of the provision of medicines in PHC through the eyes of the population.

Characteristics of the questions		Urban	Rural	Total	p value
		N(%)	N(%)	N(%)	
Do you receive medications for free on an outpatient basis (in a clinic)?	Yes	339(73,9%)	50(65,8%)	389(72,7%)	0,144
	No	120(26,1%)	26(34,2%)	146(27,3%)	
How many types of medications do you receive for free on an outpatient basis (in a clinic)?	1	144(37,9%)	14(24,1%)	158(36,1%)	0,051
	2-3	160(42,1%)	34(58,6%)	194(44,3%)	
	more than 3	76(20,0%)	10(17,2%)	86(19,6%)	
Do you receive your free medications on time?	I receive my medications on time	263(64,6%)	32(46,4%)	295(62,0%)	0,002*
	I receive my medications with a delay, but the wait time is acceptable	58(14,3%)	8(11,6%)	66(13,9%)	
	I am receiving my medications late	42(10,3%)	12(17,4%)	54(11,3%)	
	I am not getting my medications as required	44(10,8%)	17(24,6%)	61(12,8%)	
Have you ever had to buy medications at your own expense that you were entitled to within the framework of the State Fund for Medical Care/Compulsory Medical Insurance (free of charge)?	Yes	213(51,6%)	34(50,0%)	247(51,4%)	0,81
	No	200(48,4%)	34(50,0%)	234(48,6%)	
If you answered "Yes" to the previous question, please indicate why?	I had no choice, since I did not receive the prescribed medicine	103(45,0%)	26(61,9%)	129(47,6%)	<0,001**
	It was easier/closer/more convenient for me to buy at my own expense	106(46,3%)	6(14,3%)	112(41,3%)	
	I am not satisfied with the quality of medicines given free of charge, and	20(8,7%)	10(23,8%)	30(11,1%)	
Pharmacist/doctor helps me get my medications	Agree	288(67,0%)	46(62,2%)	334(66,3%)	0,089
	I completely agree	70(16,3%)	16(21,6%)	86(17,1%)	
	Neutral	58(13,5%)	6(8,1%)	64(12,7%)	
	I don't agree	12(2,8%)	6(8,1%)	18(3,6%)	
	I completely disagree	2(,5%)		2(,4%)	
A pharmacist/doctor helps solve any problems regarding medications	Agree	274(63,6%)	40(54,1%)	314(62,2%)	0,2
	I completely agree	82(19,0%)	18(24,3%)	100(19,8%)	
	Neutral	49(11,4%)	8(10,8%)	57(11,3%)	
	I don't agree	22(5,1%)	8(10,8%)	30(5,9%)	
	I completely disagree	4(,9%)		4(,8%)	

Continuation of Table 3.

The pharmacist/doctor answers all my questions	Agree	298(69,1%)	48(64,9%)	346(68,5%)	0,01*
	I completely agree	86(20,0%)	14(18,9%)	100(19,8%)	
	Neutral	35(8,1%)	6(8,1%)	41(8,1%)	
	I don't agree	12(2,8%)	4(5,4%)	16(3,2%)	
	I completely disagree		2(2,7%)	2(,4%)	
The pharmacist/doctor treats me with respect	Agree	304(70,5%)	50(67,6%)	354(70,1%)	0,033*
	I completely agree	90(20,9%)	10(13,5%)	100(19,8%)	
	Neutral	27(6,3%)	12(16,2%)	39(7,7%)	
	I don't agree	8(1,9%)	2(2,7%)	10(2,0%)	
	I completely disagree	2(,5%)		2(,4%)	
Pharmacy/medicine dispensing office hours are acceptable to me	Agree	319(74,2%)	45(60,0%)	364(72,1%)	<0,001**
	I completely agree	84(19,5%)	14(18,7%)	98(19,4%)	
	Neutral	15(3,5%)	14(18,7%)	29(5,7%)	
	I don't agree	6(1,4%)	2(2,7%)	8(1,6%)	
	I completely disagree	6(1,4%)		6(1,2%)	
The doctor/pharmacist explained to me the reason for prescribing the medicine	Agree	324(75,5%)	47(64,4%)	371(73,9%)	<0,001**
	I completely agree	74(17,2%)	10(13,7%)	84(16,7%)	
	Neutral	25(5,8%)	8(11,0%)	33(6,6%)	
	I don't agree	6(1,4%)	4(5,5%)	10(2,0%)	
	I completely disagree		4(5,5%)	4(,8%)	
The doctor/pharmacist explained how, when and in what doses to take medications	Agree	301(70,2%)	46(61,3%)	347(68,8%)	<0,001**
	I completely agree	75(17,5%)	14(18,7%)	89(17,7%)	
	Neutral	27(6,3%)	9(12,0%)	36(7,1%)	
	I don't agree	20(4,7%)	2(2,7%)	22(4,4%)	
	I completely disagree	6(1,4%)	4(5,3%)	10(2,0%)	
The doctor/pharmacist explained to me what side effects there may be from taking the medicine	Agree	309(72,4%)	44(58,7%)	353(70,3%)	<0,001**

Discussion

Moderate levels of satisfaction with prescribed medications were found in China as well as other countries [9,12,16]. Our research revealed that out-of-pocket expenses are associated with the medicines, where the rate is higher among the urban population. Previous studies showed that about a third of participants purchased medicines at their own expense in Kazakhstan, which is consistent with the results of our study [10].

It is also worth noting the importance of them understanding why they are taking medications, since this will determine how they will adhere to the regimen. Medicine awareness should include how to take it, how the medicine affects the body, knowledge of the name of the drug, and any side effects or special instructions [1,19]. We found that, in general, a larger number of respondents are satisfied with the way the doctor or pharmacist explains about the prescribed medicine including how to take, why and answering questions from the service consumer. Thus, our results are consistent with other studies [6,17,18]. Despite the fact that our respondents are satisfied with how doctors or pharmacists explain to them the reason or other factors, we identified low adherence to medications. Other research shows that low adherence related to patients forgetting, or run out of their medications, or reluctance to take medications [13,15]. Research has shown that low

health literacy leads to poor health outcomes, especially misunderstanding of medication instructions [4,13].

Eventually, dissatisfaction may be associated with late provision or prescription of medications. This fact has been studied in some works [2,4,7,11]. In our study, we found that rural residents most often encountered late dispensing of medicines, which leads to the risk of increased out-of-pocket expenses for patients.

Conclusion

Our study showed that there are additional costs for the purchase of medicines, and residents living in villages are more often faced with the situation of untimely delivery of medicines. These results may help to reconsider the way medicines are provided to the population in a way that is consistent with health financing strategies. Overall, there is a positive response to the work of the doctor or pharmacist in providing information about medicines.

Sources of support: No external sources of funding were provided for this research

Conflict of interest: The authors declare they have no competing interests.

Ethical Approval: Approved by local ethics committee of the Kazakh National Medical university №18, February 6, 2023.

References:

1. Ascione F.J., Kirscht J.P., Shimp L.A. An assessment of different components of patient medication

- knowledge // *Medical care*. 1986. 24(11):1018–28. Epub 1986/11/01. doi: 10.1097/00005650-198611000-00006.
2. Ayalew M.B., Taye K., Asfaw D. et al. Patients'/clients' expectation toward and satisfaction from pharmacy services // *J Res Pharmacy Practice*. 2017. 6(1):21. doi: 10.4103/2279-042X.200995
3. Barthélémy K.D. Demographic, epidemiological, and health transitions: are they relevant to population health patterns in Africa? // *Glob Health Action*. 2014. 7:22443.
4. Berkman N.D., Sheridan S.L., Donahue K.E., Halpern D.J., Crotty K. Low health literacy and health outcomes: an updated systematic review // *Ann Intern Med*. 2011. 155(2):97–107. doi: 10.7326/0003-4819-155-2-201107190-00005.
5. Berehe T.T., Bekele G.E., Yimer Y.S., Lozza T.Z. Assessment of clients' satisfaction with outpatient services at Yekatit 12 hospital medical college, Addis Ababa, Ethiopia // *BMC Res Notes*. 2018. 11(1):507. doi: 10.1186/s13104-018-3603-3
6. Cardosi L., Hohmeier K.C., Fisher C., Wasson M. Patient Satisfaction With a Comprehensive Medication Review Provided by a Community Pharmacist // *J Pharm Technol*. 2018 Apr. 34(2):48-53. doi: 10.1177/8755122517752158
7. Davis T.C., Wolf M.S., Bass P.F., Thompson J.A., Tilson H.H., Neuberger M. et al. Literacy and misunderstanding prescription drug labels // *Ann Intern Med*. 2006. 145(12):887–94. Epub 20061129. doi: 10.7326/0003-4819-145-12-200612190-00144 .
8. Godman B., Malmström R.E., Diogene E. et al. Are new models needed to optimize the utilization of new medicines to sustain healthcare systems? // *Expert Rev Clin Pharmacol*. 2015. 8(1):77–94. doi:10.1586/17512433.2015.990380.
9. Hasen G., Negeso B. Patients Satisfaction with Pharmaceutical Care and Associated Factors in the Southwestern Ethiopia // *Patient Prefer Adherence*. 2021 Sep 21. 15:2155-2163. doi: 10.2147/PPA.S332489.
10. Jamil A., Sundetgali K., Laura S., Ainur T., Daniyar T., Sabit P., Kanatphan K. Assessment of Satisfaction with Drug Provision of Antihypertensive Drugs at the Outpatient Level of Privileged Categories of Residents // *Int J Prev Med*. 2022 Apr 8.13:69. doi: 10.4103/ijpvm.IJPVM_689_20.
11. Khudair I.F., Raza S.A. Measuring patients' satisfaction with pharmaceutical services at a public hospital in Qatar // *Int J Health Care Qual Assur*. 2013. 26:398–419. doi: 10.1108/IJHCQA-03-2011-0025
12. Kebede H., Tsehay T., Necho M., Zenebe Y. Patient Satisfaction Towards Outpatient Pharmacy Services and Associated Factors at Dessie Town Public Hospitals, South Wollo, North-East Ethiopia. *Patient Prefer Adherence*. 2021 Jan 22. 15:87-97. doi: 10.2147/PPA.S287948.
13. Kini V., Ho P.M. Interventions to Improve Medication Adherence: A Review. *JAMA*. 2018 Dec 18. 320(23):2461-2473. doi: 10.1001/jama.2018.19271
14. OECD health statistics 2016. Paris: Organisation for Economic Co-operation and Development; 2016. <https://www.oecd.org/els/health-systems/Table-of-Content-Metadata-OECD-Health-Statistics-2016.pdf> (accessed: June 30, 2023).
15. Piña I.L., Di Palo K.E., Brown M.T., Choudhry N.K., Cvenegros J., Whalen D., Whitsel L.P., Johnson J. Medication adherence: Importance, issues and policy: A policy statement from the American Heart Association // *Prog Cardiovasc Dis*. 2021 Jan-Feb. 64:111-120. doi: 10.1016/j.pcad.2020.08.003.
16. Ren J., Huang X., Zhang T., Zhou X., Liu C., Wang X. Patient satisfaction with prescribed medicines in community health services in China: A cross-sectional survey 6 years after the implementation of the national essential medicines policy // *Health Soc Care Community*. 2018 Jul. 26(4):495-506. doi: 10.1111/hsc.12548.
17. Salamatullah A., Ali M., Alharbi A., Balhmer A., Jalal R., Alabdali D., Alhajjaji G. Patient Satisfaction with Pharmaceutical Services in Makkah: A Cross-sectional Study // *J Res Pharm Pract*. 2022 May 25. 10(4):174-179. doi: 10.4103/jrpp.jrpp_94_21.
18. Sarker A.R., Sultana M., Ahmed S., Mahumud R.A., Morton A., Khan J.A.M. Clients' Experience and Satisfaction of Utilizing Healthcare Services in a Community Based Health Insurance Program in Bangladesh // *Int J Environ Res Public Health*. 2018 Aug 2. 15(8):1637. doi: 10.3390/ijerph15081637
19. Takaki H., Abe T., Hagihara A. Physicians' and pharmacists' information provision and patients' psychological distress // *J Interprof Care*. 2017. 31(5):575–82. Epub 20170728. doi: 10.1080/13561820.2017.1334635.
20. Wirtz V.J., Moucheraud C. Beyond availability and affordability: how access to medicines affects non-communicable disease outcomes // *Lancet Public Health*. 2017. 2(9):e390–e391. doi:10.1016/S2468-2667(17)30168-8.

Corresponding author:

Aziza Imamatinova, 1st year doctoral student of the educational program "Public health", Asfendiyarov Kazakh National Medical University, Almaty, Republic of Kazakhstan.

Post address: Republic of Kazakhstan, Almaty, 050000, Aksai-1, house 24, apartment 26.

E-mail: azizaimamatdinova0@gmail.com

Phone: +77020249250