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Review article

## Challenges and Opportunities for Improving Health Literacy in Rural Areas of Kazakhstan: Current Trends and Strategies for Improvement

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### Abstract

Health literacy is a critical determinant of public health outcomes, shaping individuals' abilities to access, understand, and apply health information effectively. Despite Kazakhstan's advancements in healthcare, significant disparities persist between urban and rural populations, with rural areas exhibiting disproportionately low levels of health literacy. This disparity exacerbates existing healthcare inequalities, resulting in delayed diagnoses, limited use of preventive care, and poor health outcomes. The urgency to address these gaps is underscored by the rising prevalence of chronic diseases and the need for informed patient participation in healthcare.

The study reviews recent literature published from 2013 to 2023 (10 years), national statistics, and case studies from both Kazakhstan and similar global contexts.

Research was conducted through PubMed, Scopus, Web of Science and Google Scholar. Additionally, regional academic journals and reports from the World Health Organization were utilized. This article examines the significant barriers and opportunities associated with improving health literacy in rural areas of Kazakhstan.

It highlights the increasing prevalence of low health literacy, its consequences on public health, and strategies to address these issues. The findings emphasize the importance of targeted interventions in bridging rural health literacy gaps. In rural areas of Kazakhstan access to healthcare and public health education remains limited. Low health literacy in these areas exacerbates disparities in health outcomes, leading to higher rates of preventable diseases, limited adoption of preventive care, and increased economic strain on the healthcare system. Major barriers include geographic isolation, inadequate educational resources, and cultural beliefs that hinder the dissemination and understanding of health information.

Conversely, the adoption of mobile health tools, community health worker programs, and culturally tailored health campaigns present viable opportunities. Evidence suggests that targeted interventions—such as school-based health education, telemedicine, and policy-driven health literacy campaigns - can improve outcomes by addressing the unique socio-economic and cultural barriers in rural areas of Kazakhstan.

**Keywords:** health literacy, rural population, health knowledge, attitudes, practice, healthcare disparities, public health, health promotion.

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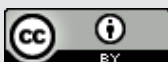
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## Introduction

Health literacy is a critical determinant of health outcomes, enabling individuals to make informed decisions regarding disease prevention, treatment adherence, and overall well-being. It involves the ability to access, comprehend, and apply health-related information effectively, influencing personal and public health [1-3]. In rural areas, where nearly 40% of Kazakhstan's population resides, low health literacy contributes significantly to disparities in healthcare access and outcomes. Rural communities face compounded challenges such as limited healthcare infrastructure, socio-economic constraints, and cultural barriers, further exacerbating health inequities [1] [4]. Improving health literacy is essential for addressing these disparities and achieving national health goals, particularly in combating non-communicable diseases, improving maternal health, and reducing vaccine hesitancy [5,6].

Despite growing recognition of the importance of health literacy, little research has focused on the unique

## Literature Search Strategy

To ensure the comprehensive and reliable synthesis of current trends, this section outlines the methodology used to gather relevant studies and data sources on health literacy in rural areas of Kazakhstan. Research was conducted through PubMed, Scopus, and Google Scholar. Additionally, regional academic journals and reports from the World Health Organization (WHO) were utilized. Keywords

## Barriers to Health Literacy in Rural areas of Kazakhstan

Health literacy, an essential determinant of public health outcomes, is disproportionately low in rural areas of Kazakhstan. This deficiency stems from several socio-economic, cultural, and systemic barriers, which significantly impede the ability of rural populations to access, understand, and utilize health information.

Socio-economic disparities are a primary obstacle to health literacy in rural areas of Kazakhstan. Limited access to quality education, particularly in remote regions, restricts individuals' capacity to comprehend health-related information [2, 3]. A 2020 study reported that approximately 65% of the rural population in Kazakhstan has only secondary education or less, which directly correlates with low health literacy levels [1]. Additionally, economic constraints such as unemployment and poverty exacerbate health disparities. These factors limit access to healthcare services, healthy lifestyles, and health education programs, creating a vicious cycle of poor health outcomes [4,6].

Geographic remoteness is another critical factor contributing to low health literacy. Many rural settlements are located far from urban centers, where most healthcare facilities and educational resources are concentrated. This physical isolation hinders regular access to healthcare professionals and health education initiatives, leaving rural residents reliant on limited local resources or self-diagnosis, often influenced by misinformation [5].

Cultural norms and linguistic diversity in Kazakhstan also play a significant role in limiting health literacy. Rural areas are home to ethnically diverse populations speaking Kazakh, Russian, and minority languages. Health materials are often unavailable in minority languages, alienating significant portions of the population [7]. Moreover, cultural attitudes toward health, such as reliance on traditional medicine and mistrust of modern healthcare, further reduce the uptake of health literacy programs [8]. For instance,

barriers and opportunities present in rural areas of Kazakhstan. Existing health education initiatives often fail to account for the socio-cultural and infrastructural contexts of rural areas, resulting in suboptimal interventions. Furthermore, there is limited exploration of how global best practices can be adapted to these local settings. This gap highlights the need for a deeper understanding of rural health literacy dynamics and the development of targeted, evidence-based strategies.

This article aims to address these gaps by exploring the barriers, opportunities, and strategies for enhancing health literacy in rural areas of Kazakhstan. Drawing on local data and international case studies, it examines how socio-economic, cultural, and infrastructural factors shape health literacy. The study proposes tailored interventions and actionable recommendations for policymakers and public health practitioners, leveraging evidence-based approaches to improve health outcomes in rural settings.

included 'health literacy,' 'rural health in Kazakhstan,' 'health education,' and 'healthcare access disparities.' Articles published from 2018 to 2023 were prioritized, with exceptions made for highly relevant studies from 2015–2017. Inclusion criteria focused on peer-reviewed articles, government reports, and case studies.

vaccine hesitancy remains high in certain rural communities due to entrenched cultural beliefs and misinformation [9].

Education systems in rural areas of Kazakhstan face challenges such as inadequate infrastructure, lack of qualified teachers, and limited curricular emphasis on health education. Schools in these regions often lack resources to implement comprehensive health literacy programs, leaving students unprepared to navigate healthcare systems or make informed health decisions [10, 11].

The digital divide between rural and urban areas in Kazakhstan also contributes to low health literacy. Limited internet connectivity and digital skills prevent rural populations from accessing reliable online health information. While urban residents increasingly use telemedicine and digital health platforms, these resources remain underutilized in rural areas due to technological constraints and lack of awareness [12,13].

The combined effects of these barriers significantly impact health outcomes in rural areas of Kazakhstan. Low health literacy is associated with higher rates of chronic diseases such as diabetes and hypertension, delayed diagnoses, and low adherence to treatment regimens [14]. Additionally, maternal and child health indicators in rural areas lag behind national averages, reflecting the adverse effects of insufficient health education and access to care [15]. Case studies illustrate the challenges posed by low health literacy in rural areas of Kazakhstan. For example, a 2019 survey found that over 70% of rural women lacked awareness of preventive healthcare measures such as regular breast cancer screening [16]. Similarly, a community health assessment in a remote region revealed that misinformation about vaccinations led to a measles outbreak in 2020, underscoring the consequences of inadequate health education [17].

Low health literacy in rural areas imposes a significant economic burden on Kazakhstan's healthcare system. Increased hospitalizations, prolonged treatments, and preventable complications result in higher healthcare costs and strain public resources [18]. Furthermore, low health literacy undermines efforts to achieve national health goals, such as reducing the prevalence of non-communicable diseases and improving overall life expectancy [19].

The barriers to health literacy in rural areas of Kazakhstan are not unique; similar challenges are observed

### Opportunities for Improving Health Literacy in Rural areas of Kazakhstan

Improving health literacy in rural areas of Kazakhstan presents numerous opportunities, despite the existing barriers. By leveraging modern technology, education reforms, community-based interventions, and partnerships, health literacy can be effectively enhanced. This section explores these opportunities while emphasizing evidence-based solutions and lessons from global and local contexts.

Digital technology offers a transformative opportunity to improve health literacy, even in geographically isolated areas. Mobile health (mHealth) applications and telemedicine services are increasingly recognized as cost-effective methods for delivering health information and services. In rural areas of Kazakhstan, the expansion of 4G networks and mobile device ownership provides a foundation for implementing mHealth initiatives [22]. Telemedicine platforms can connect rural residents with healthcare professionals, enabling consultations and health education sessions without requiring physical travel. For example, Kazakhstan's Damumed telemedicine service has successfully increased access to medical advice, especially during the COVID-19 pandemic, highlighting its potential for long-term health education [23]. Additionally, social media platforms can serve as tools for disseminating reliable health information, countering misinformation, and engaging rural populations in health awareness campaigns [24]. Digital literacy training programs, integrated into community centers or schools, can further empower rural populations to access and utilize digital health resources. Countries such as India and Kenya have demonstrated that integrating digital tools with health literacy campaigns can significantly improve health outcomes in rural areas [25].

Kazakhstan's education system is a critical platform for fostering health literacy among rural populations. School-based health education programs can provide children and adolescents with essential knowledge and skills to make informed health decisions. Incorporating health literacy into the national curriculum as a mandatory subject can create a generational shift in attitudes toward health. For instance, health education modules focusing on nutrition, hygiene, and preventive care can address prevalent health issues such as malnutrition and infectious diseases. Pilot programs in rural schools in East Kazakhstan have demonstrated that students exposed to structured health education exhibit improved understanding of basic health concepts and practices [26]. Furthermore, teacher training programs can ensure educators are equipped to deliver accurate and engaging health education content [27].

Expanding adult education programs is another vital strategy. Community-based workshops on health topics, delivered through local schools or cultural centers, can engage rural adults and foster intergenerational learning. Such initiatives have been effective in countries like Thailand, where community health education programs significantly improved health literacy in rural populations [28].

globally in rural and underserved regions. For instance, studies in sub-Saharan Africa and Southeast Asia highlight the role of socio-economic inequality, cultural norms, and infrastructural deficits in perpetuating low health literacy [20,21]. Drawing comparisons with global contexts provides valuable insights into addressing these barriers effectively.

Community-based approaches offer culturally sensitive and sustainable methods to improve health literacy. Involving trusted community leaders, religious figures, and local organizations can enhance the credibility and reach of health education initiatives. For example, community health workers (CHWs) have been instrumental in improving health outcomes in underserved areas worldwide.

In Kazakhstan, expanding the role of CHWs to include health education and literacy training can address both informational and cultural barriers. CHWs can conduct home visits, organize group sessions, and distribute health materials tailored to the specific needs of rural communities [29]. In regions with low female literacy rates, women CHWs can play a pivotal role in engaging and educating women and children, addressing gender-specific health disparities.

Traditional practices and beliefs often influence health behaviors in rural areas of Kazakhstan. Culturally tailored health education campaigns that respect and integrate local traditions can foster acceptance and participation. For example, storytelling and visual aids, which resonate with oral traditions, can be used to convey health messages effectively.

Government policies play a fundamental role in addressing structural barriers and promoting health literacy. Integrating health literacy improvement into Kazakhstan's National Healthcare Development Program can ensure sustained funding and institutional support. Policies that incentivize healthcare providers to conduct outreach programs in rural areas can bridge the gap between urban and rural healthcare systems [30].

Additionally, partnerships with international organizations such as the World Health Organization (WHO) can provide technical assistance and resources for large-scale health literacy campaigns. WHO's Health Promoting Schools initiative has been adapted in several countries to improve youth health literacy and can be tailored to Kazakhstan's context [31].

Kazakhstan's recent focus on e-governance and digital transformation presents an opportunity to integrate health literacy into government platforms. Online portals and mobile applications offering health information, appointment scheduling, and reminders for preventive screenings can enhance accessibility and convenience for rural residents. Collaboration between the government and private sector can amplify health literacy efforts. Pharmaceutical companies, technology firms, and non-governmental organizations (NGOs) can contribute resources, expertise, and innovation. For instance, corporate social responsibility (CSR) programs can fund health education campaigns, mobile clinics, and training programs for CHWs.

In neighboring Uzbekistan, a partnership between the Ministry of Health and a telecommunications company resulted in the launch of an mHealth platform that provides

free health information and reminders via SMS. Similar collaborations in Kazakhstan can expand the reach of health literacy initiatives [32].

Global experiences offer valuable lessons for Kazakhstan. For instance, Rwanda's community health worker model has been lauded for its effectiveness in delivering health education in rural areas. CHWs are equipped with mobile devices to access training materials, record patient data, and provide tailored health education during home visits. Adapting this model to Kazakhstan's rural areas' context could yield similar benefits [33]. In Australia, the Health Literacy Network connects rural communities with health professionals through virtual platforms, enabling ongoing education and support. A similar initiative in Kazakhstan could enhance connectivity between healthcare providers and rural residents, fostering continuous health education [34].

### Strategies for Improving Health Literacy in Rural areas of Kazakhstan

Strategies to improve health literacy in rural areas of Kazakhstan require a multidimensional approach that integrates individual, community, and systemic interventions. Effective strategies must consider the unique socio-economic, cultural, and infrastructural challenges of rural areas while drawing from international best practices. This section discusses key strategies that can be implemented to enhance health literacy and their potential impact.

Creating culturally and linguistically tailored health communication materials is essential for rural populations, where many individuals may have limited education or literacy levels. Simple, visually engaging, and culturally sensitive educational resources can address these barriers. For example, posters and pamphlets written in Kazakh and Russian, accompanied by visual aids, have been shown to increase awareness of hygiene and preventive care in rural clinics [35].

Furthermore, storytelling - a method deeply rooted in Kazakh traditions - can be leveraged as a tool for health education. In other countries, storytelling has proven effective in conveying health messages, especially for populations with limited formal education [36]. By using narratives that reflect local experiences, rural residents can better relate to and adopt recommended practices. Community health workers (CHWs) can play a pivotal role in addressing the gap between rural populations and healthcare systems. CHWs can act as intermediaries, delivering health education, assisting with navigation of healthcare services, and conducting regular check-ins with vulnerable populations [37].

For instance, CHWs in South Africa have successfully reduced the burden of communicable diseases through structured outreach programs that incorporate health literacy training [38]. Implementing a similar model in Kazakhstan would require investment in CHW training programs that emphasize health literacy, including understanding medical terminology, basic diagnostics, and effective communication techniques.

Embedding health literacy initiatives within primary healthcare services ensures a systematic approach to education. Primary care providers in rural areas can integrate health literacy assessments into routine check-ups, identifying individuals who require targeted interventions [39].

Training healthcare professionals in communication strategies, such as the "teach-back" method, can further enhance the effectiveness of these interactions. In the teach-back method, patients repeat the instructions provided to

While these opportunities are promising, implementation challenges exist. Resistance to change, mistrust of modern healthcare, and limited funding may hinder progress. To address these issues, health literacy programs must prioritize community engagement, transparency, and evidence-based practices. Monitoring and evaluation frameworks can ensure accountability and measure the impact of interventions.

Sustainability is essential for the long-term success of health literacy initiatives. Building local capacity through training programs, establishing permanent CHW networks, and integrating health literacy into national policies can ensure continuity. Moreover, fostering a culture of health awareness through education, technology, and community involvement can create lasting improvements in rural areas of Kazakhstan.

them, ensuring comprehension. Studies in rural areas of India and Uganda have demonstrated the efficacy of this approach in improving adherence to treatment plans [40].

Additionally, community health fairs organized by primary care centers can serve as platforms for health education. These fairs can include workshops on nutrition, chronic disease management, and mental health awareness, tailored to address local health challenges [41].

The increasing penetration of mobile phones and internet services in Kazakhstan's rural regions provides an opportunity to deploy mobile health (mHealth) and telehealth solutions. Mobile applications can deliver personalized health messages, reminders for medication adherence, and educational content on disease prevention [42].

Kazakhstan's Damumed app, which gained prominence during the COVID-19 pandemic, can be expanded to include health literacy modules. These modules could cover topics such as vaccination, maternal health, and chronic disease management. Similarly, SMS-based interventions, which have been successfully implemented in Kenya to promote maternal health awareness, could be adapted to rural areas of Kazakhstan [43].

Telehealth platforms can also facilitate direct interactions between healthcare providers and rural residents. Through virtual consultations, patients can access expert advice and learn about preventive care without the need for travel. To maximize the impact of telehealth, government policies must prioritize the expansion of digital infrastructure in rural areas.

Educational institutions are critical for fostering long-term improvements in health literacy. Integrating health education into the school curriculum can instill foundational knowledge and skills among children and adolescents. Topics such as nutrition, physical activity, mental health, and substance abuse prevention can be covered in an age-appropriate manner [44].

Teacher training programs are essential to ensure educators are equipped to deliver health education effectively. Interactive teaching methods, such as role-playing and group discussions, can engage students and enhance retention of information. Moreover, involving parents in school-based health initiatives can create a supportive environment for adopting healthy behaviors.

Public-private partnerships offer a viable strategy to mobilize resources and expertise for health literacy programs. Private companies can support health campaigns,

sponsor mobile clinics, and fund community health worker training programs. For example, in Turkey, a partnership between the Ministry of Health and a telecommunications company facilitated the launch of a mobile health platform that provided free health education content [45].

Kazakhstan could replicate this model by engaging local businesses, pharmaceutical companies, and technology firms. Incentivizing private sector involvement through tax benefits or public recognition can foster sustained collaboration. Mass media campaigns can significantly influence public awareness and behavior. Radio programs, television ads, and social media campaigns in local languages can reach wide audiences in rural areas. For instance, in Vietnam, a radio-based health education program led to improved maternal health outcomes in rural communities [46]. In Kazakhstan, local influencers and community leaders can play a vital role in disseminating health messages on social media platforms such as Instagram and TikTok. Collaboration with trusted figures ensures greater acceptance of health campaigns.

Government commitment to improving health literacy is crucial for sustainable progress. Policies that mandate health literacy training for healthcare providers, integrate health education into national curricula, and

## Conclusion

Improving health literacy in rural areas of Kazakhstan is both a critical challenge and a promising opportunity to advance public health and economic well-being. This article has explored the multifaceted barriers that hinder health literacy, ranging from limited access to healthcare infrastructure and educational disparities to socio-cultural factors and economic constraints. Addressing these barriers requires a holistic and data-driven approach that draws on global best practices while tailoring solutions to the unique context of rural areas of Kazakhstan.

Opportunities for improving health literacy include leveraging mobile technology, fostering community engagement through health workers, and implementing culturally sensitive educational programs. International examples, such as mobile health applications in Africa and school-based health education in Europe, offer valuable insights that can be adapted to Kazakhstan's context. Strategic interventions - such as integrating health literacy into primary care services and fostering public-private partnerships - can create sustainable change by aligning government, community, and private sector efforts.

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allocate funding for rural health programs are essential [30]. Kazakhstan's National Healthcare Development Program can serve as a platform to institutionalize health literacy initiatives. Monitoring and evaluation mechanisms should be established to track progress and ensure accountability.

Kazakhstan can benefit from collaboration with international organizations and neighboring countries. Partnerships with entities such as the WHO and UNICEF can provide technical expertise and funding for large-scale health literacy campaigns. Additionally, knowledge exchange programs with countries like Singapore and Australia, which have implemented successful health literacy initiatives, can inform Kazakhstan's strategies [47].

To ensure the sustainability of health literacy programs, local communities must be actively involved in planning and implementation. Training local leaders, establishing permanent CHW networks, and creating self-sustaining health education programs can ensure continuity.

Moreover, fostering a culture of lifelong learning, where individuals continuously seek and apply health knowledge, can drive lasting improvements. Government and community stakeholders must work together to create environments that support informed health decisions.

To ensure success, health literacy strategies must be embedded within national healthcare policies, supported by rigorous monitoring and evaluation systems. Long-term sustainability requires active community involvement and the development of self-sustaining health education frameworks. By prioritizing health literacy, Kazakhstan can not only improve individual and population health outcomes but also empower its rural communities, paving the way for a healthier and more equitable future.

**Directions for Future Research.** Future studies should focus on exploring the cultural dimensions of health literacy in Kazakhstan, evaluating the long-term impact of telehealth interventions, and developing multilingual educational materials tailored to the country's diverse ethnic groups.

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## Қазақстанның ауылдық аудандарында медициналық сауаттылықты арттыру мәселелері мен мүмкіндіктері: Ағымдағы үрдістер мен жақсарту стратегиялары

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### Түйіндеме

Медициналық сауаттылық денсаулық сақтау саласындағы нәтижелерді анықтайтын, халықтың медициналық ақпаратқа қол жеткізу, оны түсіну және тиімді қолдану қабілетін анықтайтын маңызды фактор болып табылады. Қазақстанның денсаулық сақтау саласындағы жетістіктеріне қарамастан, қала және ауыл тұрғындарының арасында айтарлықтай айырмашылықтар сақталуда, атап айтқанда, ауылдық аудандарда медициналық сауаттылық деңгейі төмен. Бұл теңсіздік денсаулық сақтау саласындағы теңсіздікті күшейтеді және диагнозды уақтылы қоймауға, профилактикалық көмекті шектеулі пайдалануға және денсаулық сақтаудағы қызметтердің төмен нәтижелеріне алып келеді. Бұл олқылықтарды жоюдың өзектілігі созылмалы аурулардың көбеюімен және пациенттердің медициналық көмек көрсету үрдісіне ақпараттандырылған қатысу қажеттілігімен ерекшеленеді.

Әдеби шолу барысында 2013 жылдан 2023 жылға дейінгі аралықта (10 жыл ішінде) жарияланған ең жаңа әдебиеттерді, Қазақстанда және жаһандық контекстте ұлттық статистика мен кейстер талданды. Зерттеу PubMed, Scopus, Web of science және Google Scholar базаларының көмегімен жүргізілді. Сонымен қатар, Дүниежүзілік денсаулық сақтау ұйымының аймақтық ғылыми журналдары мен есептерінің деректері қолданылды. Бұл мақалада Қазақстанның ауылдық жерлерінде медициналық сауаттылықты арттыруға байланысты елеулі кедергілер мен мүмкіндіктер қарастырылады.

Медициналық сауаттылықтың төмен болу үрдісінің өсіп келе жатқанын, оның қоғамдық денсаулыққа әсерін және осы мәселелерді шешу стратегиясын көрсетеді. Зерттеу нәтижелері ауылдық жерлердегі медициналық сауаттылықтағы олқылықтарды жою үшін мақсатты шаралардың маңыздылығын көрсетеді. Бүгінде Қазақстанның ауылдық жерлерінде Денсаулық сақтау мен санитарлық ағартуға қолжетімділіктің деңгейі шектеулі. Медициналық сауаттылықтың төмендігі денсаулық көрсеткіштеріндегі теңсіздіктерді күшейтеді, алдын алуға болатын аурулардың өршуін жоғарылатады, алдын алу шараларына қолжетімділікті шектейді және денсаулық сақтау жүйесіне экономикалық жүктемені арттыруға алып келеді. Негізгі кедергілерге географиялық оқшау орналасу, білім беру ресурстарының жеткіліксіздігі және медициналық ақпараттың таралуына кедергі келтіретін мәдени нанымдар жатады. Ал, мобильді медициналық құралдарды, жергілікті медицина қызметкерлеріне арналған бағдарламаларды және мәдени ерекшеліктерді ескеретін денсаулық сақтау науқандарын енгізу нақты мүмкіндіктерге жол ашады.

Деректер мектептердегі санитарлық ағарту, телемедицина және саясатқа негізделген медициналық сауаттылықты арттыру науқандары сияқты мақсатты іс-шаралар Қазақстанның ауылдық аудандарындағы бірегей әлеуметтік-экономикалық және мәдени кедергілерді жою арқылы нәтижелерді жақсарту алатынын көрсетеді.

Түйін сөздер: медициналық сауаттылық, ауыл халқы, денсаулық туралы білім, көзқарас, тәжірибе, денсаулық сақтаудағы теңсіздік, қоғамдық денсаулық сақтау, денсаулықты нығайту.

### Проблемы и возможности повышения медицинской грамотности в сельских районах Казахстана: Текущие тенденции и стратегии улучшения

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### Резюме

Медицинская грамотность является важнейшим фактором, определяющим результаты в области общественного здравоохранения, определяющим способность людей получить доступ к медицинской информации, понимать ее и эффективно применять. Несмотря на достижения Казахстана в области здравоохранения, сохраняются значительные различия между городским и сельским населением, причем в сельских районах уровень медицинской грамотности непропорционально низок. Это неравенство усугубляет существующее неравенство в области здравоохранения, приводя к несвоевременной постановке диагноза, ограниченному использованию профилактической помощи и плохим результатам в отношении здоровья. Срочность устранения этих пробелов подчеркивается растущей распространенностью хронических заболеваний и необходимостью информированного участия пациентов в оказании медицинской помощи.

В исследовании анализируется новейшая литература, опубликованная с 2013 по 2023 год (за 10 лет), национальная статистика и тематические исследования как в Казахстане, так и в аналогичных глобальных контекстах. Исследование проводилось с помощью PubMed, Scopus, Web of science и Google Scholar. Кроме того, были использованы региональные научные



журналы и отчеты Всемирной организации здравоохранения. В этой статье рассматриваются значительные барьеры и возможности, связанные с повышением медицинской грамотности в сельских районах Казахстана. В нем подчеркивается растущая распространенность низкой медицинской грамотности, ее последствия для общественного здравоохранения и стратегии решения этих проблем.

Результаты исследования подчеркивают важность целенаправленных мероприятий для устранения пробелов в медицинской грамотности в сельской местности. В сельской местности Казахстана доступ к здравоохранению и санитарному просвещению остается ограниченным. Низкая медицинская грамотность в этих областях усугубляет различия в показателях здоровья, что приводит к более высокому уровню предотвратимых заболеваний, ограниченному внедрению профилактических мер и увеличению экономической нагрузки на систему здравоохранения. Основным препятствиям относятся географическая изоляция, недостаточные образовательные ресурсы и культурные убеждения, которые препятствуют распространению и пониманию медицинской информации. И наоборот, внедрение мобильных медицинских инструментов, программ для местных медицинских работников и кампаний по охране здоровья, учитывающих культурные особенности, открывает реальные возможности.

Имеющиеся данные свидетельствуют о том, что целенаправленные мероприятия, такие как санитарное просвещение в школах, телемедицина и кампании по повышению медицинской грамотности, основанные на политике, могут улучшить результаты за счет устранения уникальных социально—экономических и культурных барьеров в сельских районах Казахстана.

**Ключевые слова:** медицинская грамотность, сельское население, знания о здоровье, отношение, практика, неравенство в здравоохранении, общественное здравоохранение, укрепление здоровья.