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ASSESSING THE TRUST OF THE POPULATION OF KAZAKHSTAN IN SOURCES OF INFORMATION DURING THE PANDEMIC COVID-19

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Abstract

Introduction. The outbreak of a new, previously unknown infection caused by a strain of the SARS-CoV-2 coronavirus has become one of the challenges for public health in general and made its own adjustments to the lifestyle and private life of people dictated by coronavirus restrictions. At the same time, the population of the country had to adapt their behavior, including the decision to vaccinate, based on a large amount of information from various sources.

The aim. Study the level of public confidence in various sources of information about COVID-19 in Kazakhstan in order to improve subsequent information campaigns.

Materials and methods. Study design - cross-sectional, quota sampling, taking into account the distribution of gender, age, territory and type of residence in the general population of the Republic of Kazakhstan.

Descriptive statistical analyses were applied. The relationship between source of information and social-demographic variables (age, sex, and vaccination status) was tested using t-test. Statistical significance was set at $p=0.05$.

Results. The level of trust in most sources of information is rather low. The most trusted category is "consultations with healthcare professionals" (mean on a scale of 1 to 5 - 3.04, 95% confidence interval: 2.97 - 3.11). A low level of trust had such sources of information as "information from celebrities and influential people" - 2.08 (2.02-2.15), as well as "information from social networks such as Facebook, Twitter, YouTube, Telegram, WhatsApp, Instagram" - 2.29 (2.23-2.36).

Conclusion. The results of previous study showed that the effectiveness of communication in social networks involving famous people has its limitations. At the same time, the lack of trust that is common to almost all sources of information can undermine the efforts of public health professionals to communicate key messages to different population groups. During conducting information campaigns, it is necessary to look for ways to increase the trusting of important sources of information, as well as to segment the target audience depending on the trusting of them.

Keywords: COVID-19, pandemic, Kazakhstan, information, infodemic, trust, public health, vaccination.

Резюме

ОЦЕНКА ДОВЕРИЯ НАСЕЛЕНИЯ КАЗАХСТАНА К ИСТОЧНИКАМ ИНФОРМАЦИИ В УСЛОВИЯХ ПАНДЕМИИ COVID-19

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Введение: Вспышка новой ранее неизвестной инфекции, вызванной одним из штаммов коронавируса SARS-CoV-2, стала одним из вызовов для общественного здравоохранения в целом и внесла свои коррективы в уклад и частную жизнь людей, продиктованных коронавирусными ограничениями. При этом населению страны пришлось адаптировать свое поведение, включая принятие решения о вакцинации, на основе большого объема информации из различных источников.

Цель исследования: изучить уровень доверия населения к различным источникам информации о COVID-19 в Казахстане для улучшения последующих информационных кампаний.

Материалы и методы: Дизайн исследования – поперечный, выборка квотная, с учетом распределения пола, возраста, территории и типа проживания в генеральной совокупности Республики Казахстан. Инструментом сбора данных являлся адаптированный опросник с валидизированными шкалами на русском и казахском языках.

Были применены методы описательной статистики. T-test использовался для расчета р-значений и 95% доверительного интервала для связи между источником информации и половозрастными, поселенческими особенностями населения, а также статуса вакцинации и отношения к ним. Статистическая значимость была установлена на значении $p=0,05$.

Результаты: Уровень доверия к большинству источников информации довольно низок. Наибольшим доверием пользуется категория «консультации с медицинскими работниками» (среднее значение по шкале от 1 до 5 - 3,04, 95% доверительный интервал: 2,97 - 3,11). Низкий уровень доверия имели такие источники информации как «информация от знаменитостей и влиятельных лиц» - 2,08 (2,02-2,15), а также «информация из социальных сетей, таких как, Facebook, Twitter, YouTube, Telegram, WhatsApp, Instagram» - 2,29 (2,23-2,36).

Выводы: Результаты исследования показали, что эффективность коммуникации в социальных сетях с участием известных лиц имеют свои ограничения. При этом, недостаточный уровень доверия, характерный практически для всех источников информации, может подорвать усилия специалистов общественного здравоохранения по донесению ключевой информации различным группам населения. При проведении информационных кампаний необходимо искать пути повышения доверия к важным источникам информации, а также сегментировать целевую аудиторию в ЗАВИСИМОСТИ от доверия к ним.

Ключевые слова: COVID-19, пандемия, Казахстан, информация, инфодемия, доверие, общественное здоровье, вакцинация.

Түйіндеме

COVID-19 ПАНДЕМИЯСЫ КЕЗІНДЕ ҚАЗАҚСТАН ХАЛҚЫНЫҢ АҚПАРАТ КӨЗДЕРІНЕ ДЕГЕН СЕНІМІН БАҒАЛАУ

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Кіріспе: SARS-CoV-2 коронавирусының штаммынан туындаған жаңа, бұрын белгісіз инфекцияның өршуі, жалпы қоғамдық денсаулық сақтау үшін қиындықтардың біріне айналды және коронавирус шектеулерінен туындаған адамдардың өмір салты мен жеке өміріне өзіндік өзгерістер енгізді.

Зерттеу мақсаты: кейінгі ақпараттық науқандарды жақсарту мақсатында Қазақстандағы COVID-19 туралы әртүрлі ақпарат көздеріне халықтың сенім деңгейін зерттеу.

Зерттеу материалдар мен әдістері: Зерттеудің дизайны - көлденең қималық, іріктеу квоталық, Қазақстан Республикасының жалпы халқының жынысы, жасы, аумағы мен тұрғылықты жерінің түрі бойынша бөлінуін ескерілген. Деректерді жинау құралы орыс және қазақ тілдеріндегі валидацияланған және бейімделген сауалнама болып табылады.

Сипаттамалық статистикалық әдістер қолданылды. Т-тест ақпарат көзі мен халықтың жынысы, жасы, қоныстану ерекшеліктері, сондай-ақ вакцинация жағдайы мен оларға деген көзқарас арасындағы байланыс үшін р-мәндерін және 95% сенімділік интервалдарын есептеу үшін пайдаланылды. Статистикалық маңыздылық $p=0,05$ деңгейінде белгіленді.

Нәтижелері: Ақпарат көздерінің көпшілігіне деген сенім деңгейі өте төмен. Ең сенімді санат – «Денсаулық сақтау мамандарымен кеңесу» (1-ден 5-ке дейінгі шкала бойынша орташасы – 3,04, 95% құрады, сенімділік интервалы: 2,97 – 3,11). Сенім деңгейінің төменгі санаты «атақты және ықпалды адамдардан алынған ақпарат» - 2.08 (2.02-2.15), сондай-ақ «Facebook, Twitter, YouTube, Telegram, WhatsApp, Instagram секілді әлеуметтік желілердегі ақпарат» сияқты ақпарат көздері 2,29 (2,23-2,36) құрады.

Қорытынды: Зерттеу нәтижелері белгілі адамдар қатысатын әлеуметтік желілердегі коммуникация тиімділігінің шектеулігі бар екенін көрсетті. Сонымен қатар, барлық дерлік ақпарат көздеріне тән сенімнің жоқтығы денсаулық сақтау мамандарының негізгі хабарламаларды халықтың әртүрлі топтарына жеткізудегі күш-жігеріне нұқсан келтіруі мүмкін. Ақпараттық науқандарды жүргізу кезінде маңызды ақпарат көздерінің сенімділігін арттыру жолдарын іздестіру, сонымен қатар олардың сенімділігіне қарай мақсатты аудиторияны сегменттеу қажет.

Түйінді сөздер: COVID-19, пандемия, Қазақстан, ақпарат, инфодемия, сенім, қоғамдық денсаулық, еkle.

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Introduction

An outbreak of a “new” previously unknown infection caused by a strain of the SARS-CoV-2 coronavirus emerged in December 2019 in China. The World Health Organization has officially named the disease COVID-19, designating this event as a public health emergency of international concern [10]. In Kazakhstan, the first cases of a new coronavirus infection, registered on March 13, 2020, in the cities of Almaty and Nur-Sultan, were imported from Europe [3]. According to the WHO [30], as of March 27, 2022, 1,393,546 confirmed cases of COVID-19 were registered in Kazakhstan with 19,006 deaths.

The pandemic has become one of the challenges for public healthcare and has made its own adjustments to the lifestyle and private life of an individual, dictated by restrictions. In connection with the state of emergency introduced throughout the country on March 15, the activities of cultural events, shopping and entertainment facilities were suspended, there was a ban on holding family and commemorative events with a mass gathering of people and mandatory observance of quarantine rules [6].

At the same time, the population of the country had to face a huge amount of information, both reliable and fake, and make decisions regarding those sources that could be guided by to organize their daily lives.

On February 1, 2021, vaccination against Covid-19 began in Kazakhstan [1]. According to the information portal "coronavirus2020.kz", access to vaccines was provided: "QazVac", "Hayat-Vax", "CoronaVak" and "Sinopharm" [15]. For the decreed population, access to the Pfizer-BioNTech was provided, the vaccination of which began on November 12, 2021 [15].

The results obtained from Kazakh researchers [9] showed that only 22.4% of respondents agreed to receive a vaccine against COVID-19, which is comparable to the analysis of the Gallup World Poll, where the willingness of people to be vaccinated against coronavirus infection in 2020 ranged from 96% in Myanmar, to 25% in Kazakhstan [28].

Mistrust in vaccines is one of the reasons for the slow pace of vaccination both around the world and in Kazakhstan. The systematic review identified vaccine

hesitancy factors such as social, cultural, political factors; the role of media and communication, the role of the healthcare system and vaccine policy, social pressure and social responsibility, moral or religious beliefs, the role of healthcare professionals in building trust in sources of information about vaccines [12].

On the one hand, the attitude towards vaccination depends on the quality of information [27] obtained from unreliable sources, including the media and social networks (Facebook, Twitter, Tiktok, Instagram, etc.) [11, 29]. On the other hand, trust in the healthcare system is also a decisive factor in the adoption of a vaccine [20], which is confirmed by a study by Kazakh scientists, with 35% of respondents considering themselves doubtful about vaccines [17].

Thus, at present, it is relevant to study the sources of information regarding COVID-19 that are most trusted among Kazakhstanis in order to optimize communication campaigns on public health issues, including vaccination against coronavirus infection in Kazakhstan.

The purpose of this research is to study the level of public trust in various sources of information regarding COVID-19 in Kazakhstan.

Methods

This population-based study is part of the research project: "The Impact of the Covid-19 Pandemic and Restrictive Measures on Lifestyles and Access to Health Services in Kazakhstan." The design of the study is cross-sectional, the sample is quota, taking into account the distribution of gender, age, territory and type of residence in the general population, according to the statistical data of the Statistics Committee of the Ministry of National Economy of the Republic of Kazakhstan for 2019.

Total of 1021 respondents aged 18 and over were interviewed, after rejecting low-quality data from a sociological survey, the final sample consisted of 991 respondents (response rate was 97.1%). The data collection tool was an adapted questionnaire with validated scales in Russian and Kazakh. Survey period: from June 26, 2021, to July 10, 2021, which corresponds to the period of increasing incidence of Covid-19 in Kazakhstan. To visualize the epidemic process, we used data from the Worldometers COVID-19 portal as of March 08, 2022 (Fig. 1).

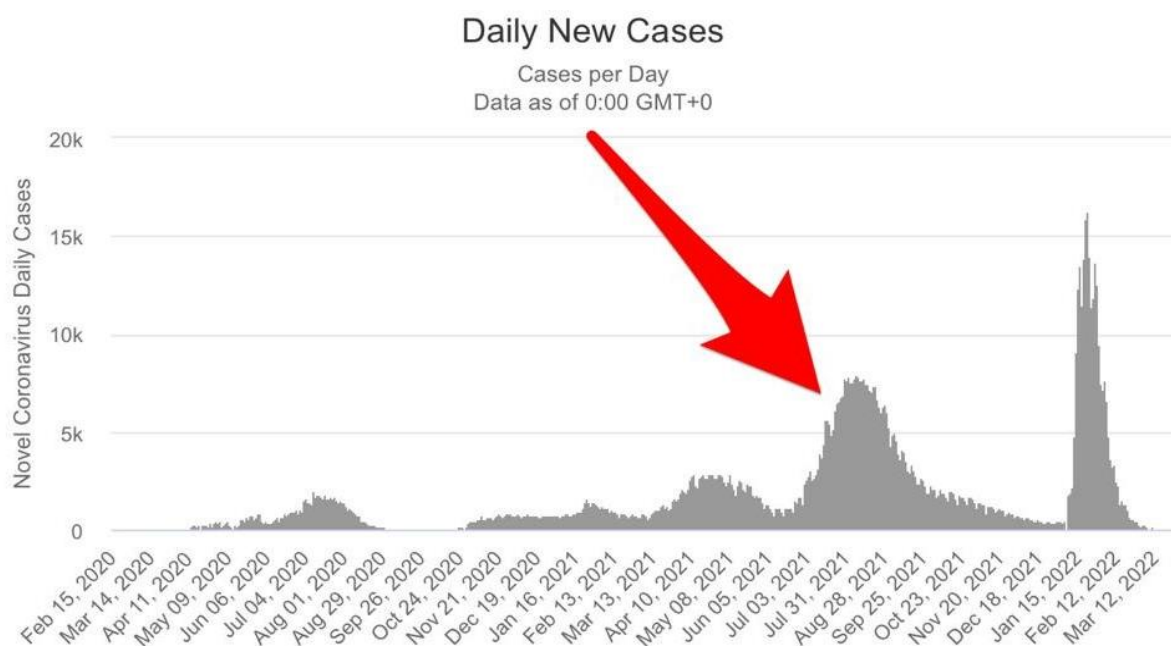


Figure 1. Daily New Cases in Kazakhstan.

Source: Worldometers info of Coronavirus.

Available online: <https://www.worldometers.info/coronavirus/> (accessed on 08 March 2022)].

In accordance with the data of the National Center for Public Health of the Ministry of Health of the Republic of Kazakhstan, during the period of the survey, namely, on July 1, 2021, in the cities of Nur-sultan, Almaty and Shymkent, as well as in the West Kazakhstan, Karaganda and Atyrau regions, strict restrictive measures were introduced; in Mangistau, Aktobe, Kostanay, Akmola and Pavlodar regions, the current quarantine measures were maintained and control over their observance was strengthened; in other regions, the situation was stable with a possible relaxation of restrictive measures [4].

The sociological survey of respondents was conducted face to face, and informed consent to participate in the study was obtained orally. The average time required to

complete the survey was 40 to 60 minutes. The study was approved by the ethical committee of the Asfendiyarov Kazakh National Medical University No. 10 (101) dated September 30, 2020. The socio-demographic characteristics of the survey included the distribution of respondents by gender; age - 18-29 years old, 30-44 years old, 45-59 years old, 60 years old and older; level of education - secondary, secondary special, higher; region of residence - city / village. The assessment of the level of communication was assessed by the question: "How much do you trust information about COVID-19 from the following sources: local radio and TV channels; international TV channels; local websites or news pages; conversations with family and friends; conversations with colleagues,

consultations with medical professionals; international websites or news pages; social networks (for example, Facebook, Twitter, YouTube, Telegram, WhatsApp, Instagram; official, government press releases; press releases from medical institutions; celebrities and influential people in social networks; mosque, church. The level of confidence in various sources of information of the respondents was assessed on a scale from 1 to 5, where 1 - no confidence; 2 - low level of trust; 3 – medium level of trust; 4 - high level of trust; 5 - absolute trust. T-test was used to calculate p-values and 95% confidence intervals for the relationship between the source of information and

gender, age, settlement characteristics of the population, as well as vaccination status and attitudes. Statistical significance was set at p-value 0.05. Data analysis was carried out using the R statistical software package.

Results

According to the results of this study, the average age of the respondents was 41 (standard deviation - 15.00), more than half of the participants were women (52.88%), almost two-thirds of the respondents were married or in a serious relationship (62.36%), more than half worked full-time (53.38 %). Socio-demographic characteristics of the study participants are presented in Table 1.

Table 1.

Socio-demographic characteristics of research participants (N=991).

Index	N (%)
Sex	
Female	524 (52.88)
Male	467 (47.12)
Age	
18-29	247 (24.92)
30-44	332 (33.50)
45-59	256 (25.83)
60+	156 (15.74)
Family status	
Married/ in a serious relationship	618 (62.36)
Not married/ widow / widower / divorced	373 (37.64)
Employment status	529 (53.38)
Full employment	94 (9.49)
Part-time employment	80 (8.07)
Does not work	288 (29.06)
Other (housewife, retired, student, temporarily laid off, sick or parental leave)	
Education	412 (41.57)
Higher (bachelor, specialist), higher (bachelor, specialist)	337 (34.01)
Secondary special (technical school, college)	242 (24.42)
Secondary (grades 10-11, incomplete secondary, primary school)	
Vaccination status	224 (22.60)
Vaccinated (received at least 1 dose of COVID-19 vaccine)	767 (77.40)

The level of trust in most sources of information is quite low and does not rise above the average level. The most trusted category is "consultations with medical professionals", which corresponds to an average level of trust with a score of 3.04 (2.97-3.11) and is also significantly higher than the level of trust in other categories, with the exception of the category "Conversations with colleagues and friends" - 2.97 (2.90-3.04). The lowest level of trust was noted for such sources of information as "information from celebrities and influencers" - 2.08 (2.02-2.15), as well as "information from social networks such as Facebook, Twitter, YouTube, Telegram, WhatsApp, Instagram" - 2.29 (2.23-2.36). Other sources of information have a significantly lower, but similar level of trust (Table 2).

Table 3 presents the average value and confidence interval of the level of respondents' confidence in various sources of information. Thus, this table reflects the differences in trust in various sources of information between men and women in the level of trust given to various sources of information. The results obtained are presented in Table 3. As the survey showed, women have a

higher level of trust in information received from various sources than men. Compared to men, women trust more such sources of information as press releases from medical institutions, official and government press releases, local radio and TV channels.

Compared to the urban population, the rural population has more confidence in the representatives of the mosque, the ministers of the church, and local radio and television channels. With regard to other sources of information, we did not find a significant difference between the urban and rural populations. Also, we looked at the difference between respondents who are vaccinated or about to receive a COVID-19 vaccine and respondents who are not vaccinated and do not intend to receive a COVID-19 vaccine. Respondents who received or are about to receive a vaccine to prevent COVID-19 statistically significantly more trusted information received in consultation with healthcare professionals, from press releases from medical institutions, local websites or news pages, international TV channels, international websites or news pages, social media, celebrities and social media influencers (Table 3).

Table 2.

The level of trust of respondents in various sources of information among respondents.

Nº	Sources of information	Mean and confidence level trust interval	Average deviation
1	Consultations with medical professionals	3,04 (2,97-3,11)	1,17
2	Conversations with family and friends	2,97 (2,90-3,04)	1,11
3	Press releases from medical institutions	2,84 (2,77-2,91)	1,19
4	Conversations with colleagues	2,76 (2,69-2,83)	1,08
5	International TV channels	2,75 (2,68-2,82)	1,16
6	Official, government press releases	2,73 (2,65-2,80)	1,20
7	Local radio and TV channels	2,66 (2,58-2,73)	1,18
8	International Websites or news pages	2,63 (2,56-2,71)	1,14
9	Mosque representatives and church ministers	2,61 (2,54-2,68)	1,20
10	Local websites or news pages	2,52 (2,45-2,59)	1,14
11	Social networks (for example, Facebook, Twitter, YouTube, Telegram, WhatsApp, Instagram)	2,29 (2,23-2,36)	1,05
12	Celebrities and social media influencers	2,08 (2,02-2,15)	1,04

Table 3.

Differences in the level of trust in information sources by gender and settlement characteristics, vaccination status and age categories.

Sources of information	Consultations with medical professionals	Conversations with family and friends	Press releases from medical institutions	International radio and TV channels	Official, government press releases	Conversations with colleagues
Female	3,12* (3,02-3,22)**	3,01 (2,91-3,11)	2,94 (2,84-3,04)	2,86 (2,76-2,96)	2,84 (2,73-2,94)	2,78 (2,69-2,88)
Male	2,95 (2,84-3,06)	2,92 (2,82-3,02)	2,73 (2,62-2,84)	2,63 (2,52-2,74)	2,61 (2,50-2,72)	2,73 (2,64-2,83)
P-value	0,019	0,198	0,005	0,002	0,003	0,447
urban population	3,01 (2,91-3,10)	3,03 (2,94-3,11)	2,83 (2,75-2,92)	2,78 (2,69-2,87)	2,68 (2,59-2,78)	2,65 (2,56-2,74)
rural population	3,09 (2,97-3,21)	2,88 (2,77-2,99)	2,65 (2,54-2,75)	2,93 (2,81-3,05)	2,85 (2,74-2,97)	2,84 (2,72-2,97)
P-value	0,264	0,037	0,049	0,024	0,014	0,007
Respondents who are vaccinated or about to receive a COVID-19 vaccine	3,3 (3,21-3,39)	3,15 (3,05-3,24)	3,04 (2,95-3,13)	3,03 (2,94-3,13)	3,03 (2,93-3,13)	2,93 (2,84-3,03)
Respondents who are not vaccinated and do not intend to receive a COVID-19 vaccine	2,71 (2,59-2,82)	2,44 (2,34-2,55)	2,88 (2,77-2,98)	2,39 (2,28-2,49)	2,34 (2,23-2,44)	2,27 (2,19-2,40)
p-value	p < 0,001	0,022	p < 0,001	p < 0,001	p < 0,001	0,010
Age 18–29 years old	3,2 (3,06-3,35)	2,98 (2,84-3,11)	2,99 (2,84-3,14)	2,86 (2,71-3,01)	2,84 (2,68-2,99)	2,73 (2,60-2,85)
30–44 years old	2,97 (2,84-3,09)	2,96 (2,83-3,08)	2,79 (2,67-2,92)	2,74 (2,61-2,86)	2,69 (2,56-2,81)	2,74 (2,62-2,86)
45–59 years old	2,97 (2,81-3,12)	2,93 (2,80-3,06)	2,76 (2,61-2,90)	2,66 (2,52-2,80)	2,67 (2,52-2,81)	2,82 (2,69-2,96)
60 years and older	3,06 (2,88-3,23)	3,03 (2,85-3,22)	2,83 (2,65-3,02)	2,76 (2,58-2,93)	2,74 (2,55-2,93)	2,74 (2,57-2,92)
P-value	0,069	0,844	0,121	0,296	0,372	0,720

We did not find significant differences in the level of trust in information sources among representatives of various age categories, which are represented from 18 to 60 years and older (Table 3). However, there is a trend that among respondents aged 30–44, the level of trust in consultations with medical professionals is lower compared to the group of respondents aged 18–29. In addition, in the same age group of 30–44 years, social networks (for example, Facebook, Twitter, YouTube, Telegram, WhatsApp, Instagram) are more trusted compared to the age group of 60 years and older.

The discussion of the results

Consistent with previous studies [13, 7, 26], this study found that the most commonly used sources of information about COVID-19 differ across sociodemographic variables. The results of the sociological survey showed that the level of respondents' trust in most sources of information is below 3, assessed on a five-point scale, which may be due to the general low level of public trust in all sources of information. Most of all, the respondents trusted the professional opinion of the medical community, and the lowest level of trust had information from social networks and from famous and public people speaking in the media. We consider these data as a positive trend, since it is in social networks that unverified information, conspiracy theories and disinformation are most often published [21, 23]. In addition, there have been cases when public people often broadcast distorted facts and incorrect information [21]. Respondents who received or are about to receive a vaccine to prevent COVID-19 statistically significantly more trusted most sources of information (consultations with medical professionals, press releases from medical institutions, local websites or news pages, international TV channels, international websites or news pages, social networks, opinions of celebrities and social media influencers). This is consistent with the latest research data, according to which people who demonstrate more confidence in existing state institutions and official sources of information are more willing to be vaccinated [24, 8, 18, 14]. In our sample, women show a higher level of trust in medical sources of information (press releases from medical institutions, official, government press releases, local radio, and TV channels). This agrees with the literature data [26, 7, 13].

Among the respondents of all age categories, there were no significant differences in the level of trust in various sources of information. However, among respondents aged 30–44 years, the level of trust in consultations with medical professionals is lower compared to the group aged 18–29 years, and the level of trust in such sources of information as social networks (Facebook, Twitter, YouTube, Telegram, WhatsApp, Instagram) is higher.) compared with the age group 60 years and older. The age difference in trust in various sources is consistent with the results of a previous study [13]. Older people (60+) trust Internet sources less than their middle-aged counterparts, evaluating the Internet and television as the least reliable sources of information [22]. Compared to the urban population, the rural population trusts the opinion of mosque representatives, church officials, and local radio and television channels more. We believe that this may be due to limited access to the Internet and other sources of information, as well as the

predominance of the number of believers among respondents living in rural areas.

The present study has a number of limitations. The cross-sectional design of the study allows behavior to be assessed in only one time period. The quota sample of the population cannot reflect the properties of the entire population of Kazakhstan. Despite these limitations, this study contributes to a deeper understanding of the trust of the population of Kazakhstan in sources of information and allows the results to be used to improve the processes of communication of health measures in crisis situations such as the COVID-19 pandemic.

Conclusions.

Thus, the results of this study show that the general low level of trust in all sources of information may indicate important gaps in the effectiveness of communication and the need to develop and implement measures to improve the exchange of information related to the health of the population of Kazakhstan. To effectively promote preventive healthcare campaigns, it is necessary to increase public confidence in official government sources of information, with the involvement of the medical community, selecting convenient communication channels, and developing content that is sensitive to gender, age settlement characteristics of the population. Professional training in effective communication strategies and development of opinion leaders among health professionals can improve the quality of communication of health information by disseminating vital health information to the population, especially when new diseases or pandemics emerge.

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