Study on the accessibility of digital health tools

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Abstract. The active transition to digital services due to quarantine restrictions suggests that there is a problem with the availability of digital tools for maintaining the health of Russians. The purpose of the article is to determine the demand for digital services operating in the field of health saving, as well as to identify the limitations of using these tools in modern conditions. The results of the study show that sites and mobile applications that allow receiving medical services remotely are in the greatest demand. The main limitations to the use of digital tools are doubts about the quality of the services provided and the availability of technological capabilities to use the services.

1 Introduction

The authors conclude that the digitalization of medical activities will greatly simplify the access of the population to qualified medical services and make medical services more personalized [1]. The expansion of the use of digital services in healthcare is supported at the state level: “The healthcare systems of Russia and almost all, both developed and developing, countries of the world are faced with systemic problems. Most of the existing health care systems were created 100-200 years ago in other community-social and economic conditions [2]. In addition, there has been a leap in the development of high-tech medical care, the creation of wearable means of monitoring physiological parameters, as well as implantable medical devices and remote control means” [3]. In accordance with the above, it is relevant to monitor the availability of digital services for Russians.

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2 Theoretical aspects of the study

Digital services play an important role in maintaining health and are aimed at increasing the availability, personalization, prevention, and safety of medical services [4]. IT innovations are constantly pushing the boundaries of what healthcare can do. Hospitals around the world keep up with progress - they update hardware and software solutions, medical equipment, so that patients have access to high-tech care. This is how oncology centers

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with modern digital scanners and multidisciplinary mega-hospitals equipped with medical robots appear [5]. Digital services affect not only medical technologies, but also the processes associated with the administration of the provision of medical services: the work of the registry, maintaining hospital records, etc. Digital services not only help to deal with the flow of patients, but also deal with more complex tasks - developing pharmaceuticals, analysing and storing patient records, or can signal to the doctor that a particular patient may have a concomitant disease that is easy to miss. Artificial intelligence is already reducing the number of errors in cancer diagnosis, and cancer patients are much more likely to survive [6].

The greatest effectiveness of digital health tools was manifested during the coronavirus pandemic. All medical institutions around the world are faced with the same problems - a huge number of patients, lack of resources and routine operations that need to be performed manually at a time when patients need prompt care [7]. Scientists and doctors began to use new digital technologies to fight for the lives of patients more successfully. The COVID-19 laboratory diagnostics service, created in less than a month and including 600 institutions, made it possible to form a single up-to-date database of patients with a confirmed diagnosis. Another important information service is the unified digital register of patients with coronavirus infection, which includes about 250 healthcare organizations that provide personalized registration, routing, and management of patients from the moment the virus is detected. The register is available in real time to all parts of the healthcare system. Here's how it works: once a patient's diagnosis is confirmed, the severity of their condition is entered into a register. Contact them and check the status. An ambulance goes to seriously ill patients, and the treatment of patients with symptoms of acute respiratory viral infections or pneumonia that does not require hospitalization is carried out by a telemedicine centre [8].

Artificial intelligence also came to the aid of doctors, using new technologies, radiologists got the opportunity not to miss pathologies in a large stream of studies and to quickly determine the stages of development of pneumonia on CT scans of the lungs.

Based on the examples given, one could conclude that health care is one of the most innovative areas where the use of new digital tools is commonplace. However, several subjective factors do not allow scaling the experience of using digital services. The presented study will reveal some of the reasons for this situation.

3 Methodical approaches and results

The acknowledgements should be typed in 9-point Times, without title. The accessibility of digital health tools was assessed using a survey of 1,200 residents of the Russian Federation. The survey results are shown in Figure 1.
Fig. 1. The result of the answer to the question "Did you use the opportunity to consult a doctor online?", % of respondents.

Already, more than half of Russians are aware of the possibility of using digital technologies when receiving medical consultations, the highest awareness among residents of million-plus cities, the lowest in small towns. Next, we present information on the demand for digital services related to health savings, Figure 2.

Fig. 2. The result of the answer to the question "Did you use digital services related to health savings?", % of respondents.
More than half of the respondents use digital services, and Internet sites are predominantly used - 34%. Next, we present information about the situations in which digital services are used, Figure 3.

![Fig. 3. Distribution of respondents' answers to the question "In what situation would you use digital services for the purpose of health saving", % of respondents.](image)

The most common situations in which Russians allow the opportunity to consult a doctor remotely are during quarantine (15%), with signs of illness (13%), if it is very bad (11%), or, on the contrary, if nothing serious (10%). There is also a high probability of contacting remotely if it is not possible to come in person (15%) or if you just need a consultation (6%). Next, we will provide information on the reasons for refusing to use digital services in matters of health saving, Figure 4.
The reasons why our fellow citizens do not allow themselves the opportunity to use digital services: there is no doubt about the quality of services provided using digital tools (19%), the need and the inability to apply (16% and 15% respectively), there is no trust (15%).

4 Conclusions

As a result of the study of the use of digital tools in the health care of citizens, it can be concluded that the popularization of digital services can be achieved by addressing the following issues:
- adaptation of technologies to the capabilities of individual territories, providing high-speed Internet access and the formation of elementary skills in the use of computer equipment and communication technologies.
- formation of a trusting attitude towards digital technologies in healthcare, including systems for protecting patients' personal data.
- the formation of digital competencies among the attending staff.

References

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